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ABSTRACT

Analyzed by the Delphi technique were the opinions of 100 professionals on possible technological and other changes which may impact the assessment process of handicapped students in educational environments. Analyzed were three rounds of questionnaires which were given to Ss in the following professional groupings: medical and technical, assessment practitioners, academicians/trainier/theoreticians, and lawyers and legislators. Ss were first asked to predict future events which would influence pupil appraisal, then asked to predict the date of the events, and then allowed to change their date estimates after receiving the total group estimates. Results were determined for eight areas: societal values and public opinion; litigation and legislation; new medical procedures and drug applications; computer technology, inventions, and technical breakthroughs; placement and classification; curriculum and educational programing changes; assessment technology; and university training. The following are among predicted trends: increasing efforts in locating unserved hnadicapped students, continuing litigation on the education and employment of the handicapped, the use of drugs to improve behavior and learning, reduction of institutionalization of the mentally retarded due to extensive use of behavioral modification techniques, increasing use of criterion referenced tests by classroom teachers, and the requirement of courses in the exceptional child in most educational preparatory programs. Appended are the three questionnaires. Four critical reviews are included. (DB)

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PUPIL APPRAISAL

1975 to 1990

A Delphi Study

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James R. Yates
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January, 1976

EC090087

The work reported herein was performed pursuant to a grant with the Bureau of Education for the Handicapped, Office of Education, Department of Health, Education, and Welfare, under Public Law 91-230, EHA, Title VI, Part C: Contract No. OEC-0-7898 (prime contractor, Texas Education Agency, Austin, Texas; subcontracted with the Southwest Educational Development Laboratory). The points of view or opinions expressed in this report are those of the contributing authors and do not necessarily reflect the position or policy of the U.S. Office of Education, Texas Education Agency, the Texas Regional Resource Center, or the Southwest Educational Development Laboratory.

Critical Reviews

When the Texas Regional Resource Center disseminates a document as a technical report, it requests critiques from authorities in the field for inclusion in the document. This practice provides TRRC with valuable feedback and assists the reader.

Authors were asked to focus their document critiques on these questions:

What is the significance of the study for educational leadership?

Does the study contain information useful to decision makers?

Has a reasonable interpretation of the data been made?

Does the manuscript communicate effectively the study results?

A Review

Pupil Appraisal 1975 to 1990:
A Delphi Study

Question One: Does the manuscript communicate effectively the study results? In general, the final report of your findings is well organized and can be read with relative ease by those having some background in research and development or survey analysis. Specifically, it provides a compact reference to the outcomes of the inquiry first in terms of each event and then in terms of each topic area. It might have been of some additional analytic value to group the minority statements for each event by professional categories. However, I do not believe this omission would change significantly the inferences outlined in each of the Analysis/Synthesis/Integration sections. This leads to a second question.

Question Two: Has a reasonable interpretation of the data been made? It was of interest to note that each A/S/I section contains several direct references to the two types of distributions -- Date Estimates and F/I Ratings. In general, the references to the distributions are accurate and also appropriate for the level of integration attempted in the event analyses. The general characteristics of the distributions reported in the first three rounds appear to lend justification for excluding the fourth round of the inquiry.

The procedure used in round one to construct the study instrument follows closely the general approach used in school sector Delphic inquiries. While instrument design procedures are clearly outlined and tend to provide the reader with a high level of confidence, this is somewhat lessened by the absence of an adequate rationale to account for the reduction of the original "expert" set from 100 to 53. However, it is safe to note that normal survey research techniques for handling non-response bias are usually inappropriate for Delphic inquiries such as yours.

Question Three: What is the significance of the study for educational leadership? The results of your study as they are presented in your final report are of direct benefit primarily to the educational leader who maintains a high interest in educational research and development. While your projections and forecasts deserve wider dissemination to LEA personnel, I feel that a broad-based circulation of this document would be inappropriate since most educational leaders (unfortunately) are not trained to review and interpret R & D reports. This leads to the last question.

Question Four: Does the study contain information useful to decision makers? Obviously, the response from this quarter is yes. In its current form your study could be shared with university-based personnel who are in a position to modify long term directions of training programs based on the information provided in your forecasts. Your instrument could also be used in LEA's who wish to validate your results in their own organizational settings. Finally the scenarios on university training, illustrated in the appendix, represent one way that your information might be shared with those unfamiliar with R & D reports. However, the three scenarios are relatively incomplete in terms of providing a time-ordered perspective or movement into a future time frame.

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A Review

Pupil Appraisal 1975 to 1990:
A Delphi Study

Significance of Study for Educational Leadership

Since the signing of S.6 into law by President Ford (P.L. 94-142, November, 1975) all school age handicapped children in the United States must be identified, evaluated and placed in a free, appropriate public educational setting by 1978. With this framework in mind the Delphi study on pupil appraisal should be read with great interest within the broad spectrum of the educational community. Beyond any of the specific recommendations or predictions as determined by your panel of experts, the total study in itself should stimulate future thinking and thus can be a valuable mind-expanding training tool for educational practitioners and policy-makers.

Interpretation of the Data

The display of data and subsequent interpretation of single event data are clear and understandable. However, I felt the analysis and synthesis of the clusters and the potential impact of the single events and clusters of events were weak. This is a general impression with some exceptions, most notably the section on analysis, synthesis and interpretation of events related to assessment technology which I thought was very well done.

Does the Manuscript Communicate Effectively the Study Results?

Though, as said above, the manuscript clearly interprets the data from each event, I believe the substance and/or format of the manuscript could be improved through any or all of the following:

- pay some attention in the introduction to the differences between technological forecasting and social forecasting. The appraisal study is a mix of the two and could easily be re-analyzed and re-interpreted where appropriate in these terms.

- I kept looking for a true synthesis and interpretation of all major described events in the appraisal study and did not find it. The implications scenario combined this study with two other studies and was a very interesting section; however, I believe there is a "missing link" in the package. That is, a section devoted to an analysis, synthesis and interpretation of this single appraisal study.

- The scenarios, though interesting to read were over-weighted to university preservice implications. If these events are at all plausible, a great deal of field-based change and inservice training to the field must occur. The scenarios did not deal with these.

- In concluding the reading of scenarios, I was confused if this was a single state delphi, or if the study was done for national dissemination and with national implications. I believe this should be answered in the introduction.

I hope my observations have been clearly communicated and that they are read in the same spirit in which they were written.

William V. Schipper
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A Review

Pupil Appraisal 1975 to 1990:
A Delphi Study

Recently, the use of Delphi studies has come under severe attack. Sackman (1974) has concluded that studies using the Delphi process do not measure up to APA standards for empirical science. Weatherman and Swenson (1974) have discussed the failings of educational studies which employ the Delphi technique. Weaver (1972 a, b) states that the Delphi lacks explanatory value. Nash (1975) comments that "educators have done the methodology no great service through inadvertence and carelessness as well as trying to wheedle political ends by means of a methodology that seems to be reasonably rigorous."

The study falls prey to specific criticisms of the Delphi methodology in four major areas:

1) The Use of Experts. Although Delphi studies typically use experts as a basis of their judgment, one must be critical of the way in which the term "experts" is used. Nash (1975) asks the question "Does the study use experts or merely knowledgeable persons?" Furthermore, he distinguishes between expert in the sense of a recognized authority and individuals who are powerful and/or well placed and therefore able to exercise control over future events regardless of the presence or absence of expertise. Weaver (1969) and Waldron (1970) have suggested that such factors as the expert's feelings regarding the desirability of an event and his/her integrative complexity may influence the responses of the expert. The present study does not define the basis of the expertise of the respondents, i.e., expertise as a recognized authority, through intimate knowledge, or through position. In addition, the unequal number of respondents in the various categories of medical/technical, practitioners, academics/trainers/theoreticians, and law/legislative makes interpretation of the results more difficult.

2) Generation of Events. Weatherman and Swenson (1974) indicate that educational Delphi studies are frequently susceptible to experimenter bias, particularly in the statement categorization phase. The current study mentions that over 500 future event statements were generated. Only 9% or 45 statements arrived through some process of synthesis and/or elimination were used in the subsequent rounds of the Delphi. Although faith in the expertise of the authors is not unfounded in this case, the reader should examine the content of the future event statements to determine if all appropriate aspects of the assessment process have been covered.

3) Statistics. Sackman (1974) recommends the use of statistical significance tests for precision of estimates and for mean of median differences as a means of facilitating the interpretation of results as well as assisting in establishing the reliability of the study. In the case

of the current study, significance estimates for median responses between groups as well as an estimate of within-group reliability would facilitate the interpretation of the data, especially since there are different numbers of respondents within each group.

4) Prediction of Future Results. Several studies have indicated that individuals participating in Delphi studies are more certain about the direction of an outcome than the specific date or time frame in which it will occur (Cantril, 1938; Weaver, 1970). The current study emphasizes the likelihood of events happening by certain dates and even goes so far as to call 1985 a watershed year. The reader should beware, however, that predictions regarding the direction of an event have more validity than specific predictions about the date or time frame in which it will occur.

These comments should not be construed as an indictment of the current study, as much as they are a caveat for the reader regarding the Delphi technique more generally. Weaver (1972b) concludes that:

> ... the Delphi ... is a very potent device for teaching people to think about the future of education in much more complex ways than they ordinarily would. When this use of Delphi is understood, it is found to be a useful instrument for something more than what it was designed for, namely, a general teaching strategy. What this means is that initially the way to get educators to make better decisions--decisions which account for alternative consequences--is to enhance their capacity to think in complex ways about the future, and Delphi seems ideally suited to such a purpose. (p. 34)

It is in this way that the current study is most useful. The fact that it poses some very intriguing questions and systematically collects informed opinions regarding the future direction of those events is of interest not only to those involved in pre-service training but also those who have responsibility for either monitoring or conducting educational assessments. The fact that this study forces all educators to examine their own views of assessment and the future of the educational enterprise vis a vis the assessment process, is its main attraction.

The data presented in this study are rich with meaning. Predicted trends in assessment such as increased and continued litigation, protection of First Amendment rights of students, the legal vulnerability of appraisal technicians for faulty diagnoses, the need for more comprehensively trained technicians, the likelihood that medical advances will result in an increase rather than a decrease in the number of handicapped children, the lack of faith in computer and other technological hardware, the endurance of residential facilities, the immediate establishment of mainstreaming, the shift to more vocational rather than academically oriented education, projected new trends in assessment procedures and technology which will provide for more comprehensive and less clinical assessment procedures, the increased involvement of parents and teachers in the assessment process, and the use of assessment as an accountability tool are all predications which should cause educators of all types to stand up and take notice.

Although the study provides summaries which are by and large accurate and informative, the reader is advised not to lightly skim the data, but to examine the data itself in terms of its own meaning. In this way, each individual must examine his/her situation *vis a vis* the data and clarify his/her position in regards to the projected future events.

The study also has implications for the larger educational community. The fact that the study predicts greater involvement of teachers and parents in the assessment process, focuses upon more multi-dimensional assessment data gathering and interpretation procedures, describes the implications of computer hardware and technology for the educational process, and outlines some likely shifts in the focus of the school curriculum suggests implications not only for assessment procedures but for individuals involved in the educational process more generally.

The current study, therefore, should be examined more along the guidelines Weaver proposes, i.e., as a means of enhancing an individual's ability to think about the future in complex ways, than as a rigorous application of the Delphi process. If viewed in this more positive sense, the current study should provide ample "food for thought" for those individuals who are seriously interested about the future direction of the educational process and motivated to help shape that direction.

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A Review

Pupil Appraisal 1975 to 1990: A Delphi Study

The organization of the study was presented quite well. It would have helped to have a little more information about the participants in order to provide a greater feeling of credibility. The two small sets (medical/technical and law/legislative) seem particularly subject to criticism for lack of representativeness.

The events generated and the categories devised have considerable implication for future planning in the area of pupil appraisal. This would be particularly true in terms of developing training programs as well as making decisions regarding appraisal service delivery system organization and staffing.

It is my belief that the strongest component is the discussion of specific potential consequences for each event. This would require some modification of the document to strengthen these components. The document, in its current form, is too lengthy to be as useful as possible. It might be helpful to show some examples of data treatment and then summarize. The examples of statements regarding reasons for not changing dates were interesting, but were also quite cumbersome. The scenarios do not seem to add much to the document. My basis for this reaction is that they tend to move away from a futuristic presentation of a training experience.

To summarize, I would recommend strengthening the hypothesis about the practical implications of each event with summary recommendations for categories.

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Delphi Appraisal

Delphi Appraisal

The Texas Regional Resource Center (TRRC) and 12 other such centers across the United States were established to enhance appraisal services for handicapped students in their respective geographical regions. One specific activity of the TRRC is the investigation of appraisal models which might improve the overall efficiency of pupil appraisal in Texas. When evaluating potential alternative appraisal models, future trends and influences in pupil appraisal should be taken into consideration.

One method to accomplish such planning is to bring together a group of experts to discuss, respond, and brainstorm the problems and issues in the area of pupil appraisal. At such a session individual experts could contribute information pertaining to pupil appraisal from their own field of expertise and also act as catalysts to stimulate thinking in other group members.

Such an approach, often utilized in education, has many problems. It is expensive in terms of time and money, human interaction difficulties can develop, one member of a group can unduly influence the others, or a lack of equal representation of all opinions can exist. There are logistic problems such as scheduling or obtaining participation from professions that impact the area of pupil appraisal such as theoreticians, academicians, trainers, practitioners, and researchers from fields such as education, psychology, medicine, administration, law, sociology and so forth. Adequate representation from all of these areas becomes a major problem in obtaining needed information.

However, another method of attaining similar information has been developed in recent years--the Delphi technique of future forecasting. The articulation of technological forecasting methods applicable to educational problems is receiving greater attention in educational literature (Hencley & Yates, 1974). Accelerated and exponential change is characteristic of societal and institutional settings in the western world. Leaders in these settings are in ever-increasing need of more accurate predictions of alternative futures dependent upon their areas of activity. This is especially true for leaders in the field of education. The widespread changes of the past two decades in this institutional sector appear destined to continue in the foreseeable future. This current study represents one of a relatively small number of studies in education which have utilized technological forecasting methodologies for deriving data descriptive of the future.

The Delphi forecasting technique was chosen for this study because it allows educational planners the luxury of some ambiguity and at the same time provides relatively precise data from a panel of experts. It allows the expert to express an opinion in a threat-free environment and helps reduce the possibility of confrontation or polarization over issues due to face-to-face interaction of experts. Additionally, because of the wide range of events that have potential to impact and focus the process of educational assessment, the Delphi is particularly suited to deal with and obtain opinions regarding this range.

The technique was developed in the early 1950's by Olaf Helmer and his colleagues at the Rand Corporation (Helmer, 1967). Originally the technique was utilized to obtain group opinion about urgent defense problems and related social and technological advances. The technique itself can be described as an iterative questionnaire designed to measure consensus with respect to plausible events of the future. Since its description in the literature it has become one of the better known and more widely utilized technological forecasting techniques in education. The Delphi technique has been applied to a range of educational problems: to study special education utilizing special education professionals as panelists (Reynolds, 1973), to study a major university's college of pharmacy (Hudspeth, 1972), as a portion of a major university's centennial study (Ohio State University, 1972), and to study state directors of special education (Schipper & Kenowitz, 1975).

Traditionally, the Delphi has been utilized to obtain consensus with regard to educational goals or objectives. Although this is a legitimate use of the Delphi, it is different from its application in industrial and military settings as a device for pooling information concerning technological or other advances that might be within the pipeline of research and development. This current Delphi study is an effort to utilize the technique to generate actual data of technological advances which may impact the assessment process in educational environments. Therefore, rather than having a random sample of participants, this Delphi study has a highly select, carefully identified, small number of expert panelists.

Procedures

Events in the area of pupil appraisal are shaped by many disciplines and spheres of influence (psychology, both theoretical and applied; general and special education; medicine; law; legislation; technology). Therefore, participants for this study were selected nationwide from all major disciplines that are known to influence the field of pupil appraisal. Furthermore, a variety of practitioners from federal, state, and local levels were also asked to participate. Specific individuals were selected from a review of the literature in the general field of pupil appraisal, nomination and consensus between the two authors, and nomination by individual experts contacted by the authors. Round I of the Delphi was sent to 100 professionals. Data analysis was performed on the total group, and 53 participants returning Round III were divided into four professional groupings for furthur data analysis.

Group A (N=3), Medical and Technical, consisted of two physicians working in the general field of special education research and an expert in the field of computer technology.

Group B (N=13), Practitioners, included practitioners in the general field of pupil appraisal, psychologists from various settings (public schools, mental health clinics, regional service centers, state departments), and regular and special education administrators (local and state level).

Group C (N=32), Academicians/Trainers/Theoreticians, included professionals in the fields of psychology, education, educational psychology, and special education.

Group D (N=5), Law and Legislators, included legal experts and lawyers familiar with current legal trends in education and special education.

Round I. Round I of the Delphi asked for participant involvement in the study and requested panelists to list 10 future events they believed likely to influence the general field of pupil appraisal. Copies of the introductory letter and Round I questionnaire are included in Appendix A. The span of time within which the participants were to forecast events (the next 14 to 20 years) was purposefully selected to solicit some highly probable events but to allow for some creative predictions. Thus, the first events listed by the participants are more firmly based on hard data than the last, which tend toward those they wish would occur in the future.

More than 500 event statements were generated from the return of the Round I response form. Most event statements can be categorized under one of the following eight topics:

Litigation and New Legislation

New Medical Procedures and Drug Applications

Assessment Technology

Computer Technology, Inventions, and Technical Breakthroughs

Placement and Classification

Societal Values and Public Opinion

University Training

Curriculum and Educational Programming Changes

The final 46 event statements were generated by synthesizing the most frequently occurring themes categorized under the topics cited above. Many interesting and provocative forecasts had to be omitted simply because their theme did not occur enough times to stay within the 45-item limit of the Round II questionnaire, the length of which was determined by estimating that one event statement could be read and a forecast could be made by the participants per minute. The inclusion of more event statements would have made excessive time demands and may have had a repressive effect upon the participants' willingness to respond to subsequent Delphi rounds.

Round II. The Round II questionnaire requested two types of information for each event statement. The first was a prediction of when the event would occur, 1975-1990, later than 1990, or not at all. To assist in making the prediction, the participant was to consider when in the future the event would have a 60% level of probability of occurring. The second asked participants to rate the degree to which each event should be facilitated or inhibited by decision makers. Such information would provide an indication of the participants' positive or negative values toward the event and would serve to indicate future potential for such events to decision makers. Copies of the Round II introductory letter, directions to participants, and the 46-item event questionnaire are found in Appendix B. The event questionnaire was printed on carbonless paper so that a copy of the time estimates could be retained by the participant and the second copy returned for the construction of the Round III questionnaire. Each participant needed his individual estimates in order to compare them with the total group estimates to be depicted in the Round III questionnaire.

Round III. Upon receipt of Round II questionnaires, interquartile ranges, medians, and percentages of the participants estimating L (Later) and N (Never) were computed. Round III requested that a comparison be made between the individual's date estimate and that of the total group. If the individual's time estimate for an event was outside the interquartile range, s/he was asked to consider specifying a new date. If the participant wished to change the estimate to within the interquartile range, no response was necessary for the third column (Reasons Column). If the estimate was within the interquartile range and no change was desired, s/he was to write an "S" (for same) in the second column and let the third column blank. Finally, if s/he wished to let the date estimate outside the interquartile range (including L and N estimates), the panelist was to specify in the "Reason" column a rationale for the estimate. The Reason column allowed panelists who might have specific technical information to share that data with the other participants. Forms for Round III are located in Appendix C.

Round IV. A fourth Delphi round was not mailed to the participants for the following reasons: (1) consensus of opinion on the majority of date estimates appeared to be formed; (2) Round III was much more difficult to solicit, indicating possible participant weariness; and (3) a cost/effective decision was necessary regarding the amount of new data which would be generated by a fourth round.

Results

The return rate of Round III was considered very high in view of the nature of the group (individuals with many demands for their time).

Several types of data are depicted for each event statement: (1) Date estimates for the total group; (2) Date estimates for each of the four subgroups of professionals; (3) Median and interquartile date ranges; (4) The percentage of panelists making an L or N date estimate; (5) Group ratings as to whether the event should be facilitated or inhibited by decision makers. A positive value (+1 to +5) represents the degree to which occurrence of the event should be facilitated by decision makers. A negative value (-1 to -5) represents the degree to which occurrence of the event should be inhibited by decision makers; and (6) Participant rationale for each event with a date estimate outside the interquartile range.

The item results are grouped and reported by the original categories of major topical areas. Item results are grouped in the following manner:

Area A
- Societal Values and Public Opinion
  - Events 40, 41, 42, 45, 46
- Litigation and New Legislation
  - Events 1, 26, 27, 28, 29, 30, 43, 44

Area B
- New Medical Procedures
  - Events 31, 32, 33, 34
- Computer Technology, Inventions, Technical Breakthroughs
  - Events 18, 19, 20, 21, 22, 23, 24, 25

Area C
- Placement and Classification
  - Events 10, 11
- Curriculum and Educational Program Changes
  - Events 5, 12, 13, 14, 15, 16

Area D
- Assessment Technology
  - Events 2, 3, 4, 6, 7, 8, 9, 17

Area E
- University Training
  - Events 35, 36, 37, 38, 39

An event-by-event analysis follows each topic. Summary statements for topics are located in the Implications section.

All Delphi items having implications for university training were reviewed by graduate students enrolled in a special education administration course. Three wrote scenarios pertaining to the Delphi results. These scenarios are found in Appendix D.

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Area A

Societal Values and Public Opinion

Event 40

Societal Values and Public Opinion

Factors such as reduced numbers of school-age children, depressed economics, and zero-based state budgeting have reduced financial resources to school systems. Therefore, school districts are forced to reduce and/or eliminate many special support programs such as pupil appraisal services.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=51)	__*______	0	37	-3.10
Medical/Technical (N=3)	*	0	0	-4.33
Practitioners (N=11)	__*______	0	45	-3.82
Academic/Trainers/ Theoreticians (N=32)	*________	0	34	-2.81
Law/Legislative (N=5)	*	0	60	-2.60

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 40

Participant Rationale for Leaving Date Estimate
Outside the Interquartile Range

Handicapped kids will always benefit from society's corporate guilt.

This could happen. If it does, will be prior to 1980. May not happen though as impetus for special education, individualized instruction is strong.

Appraisal will change but not cease to exist.

Basically because legislatures base funding on assessment.

Optimist! Educational institutions do not change that fast. You will have to pacify interest groups.

Pupil appraisal will always be a critical element of special support programs.

Parents will insist upon appraisal and supportive services.

Pupil appraisal services will increase in importance. They will not suffer the fate so described.

There are strong counter forces. I just don't believe that it is the trend.

Some special support services may be eliminated but realization of the need for accurate appraisal will result in increasingly improved pupil appraisal services.

Already happening! At least in some places.

Efforts to upgrade services will include pupil appraisal services.

I believe many of these programs are necessary and will always be necessary.

Programs may be reduced, but accountability is moving to more testing/assesment, not less.

These services will always be needed to help serve handicapped children.

Too well entrenched.

From an historical viewpoint education dollars are likely to continue growing.

Event 41

Societal Values and Public Opinion

A significant decrease in the amount of litigation associated with services for the handicapped has occurred primarily due to a general acceptance of society's responsibility to educate and employ the handicapped.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	__________*	9	0	3.62
Medical/Technical (N=3)	*	33	0	.67
Practitioners (N=13)	_____*	0	0	3.62
Academic/Trainers/ Theoreticians (N=32)	___*	9	0	3.72
Law/Legislative (N=5)	*__________	20	0	4.80

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 41

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Litigation will increasingly be urged by the legal profession.

Present political and social climate indicates a delay beyond 1990.

Acceptance and reappraisability will be achieved in some areas but probably not totally before the year 2000.

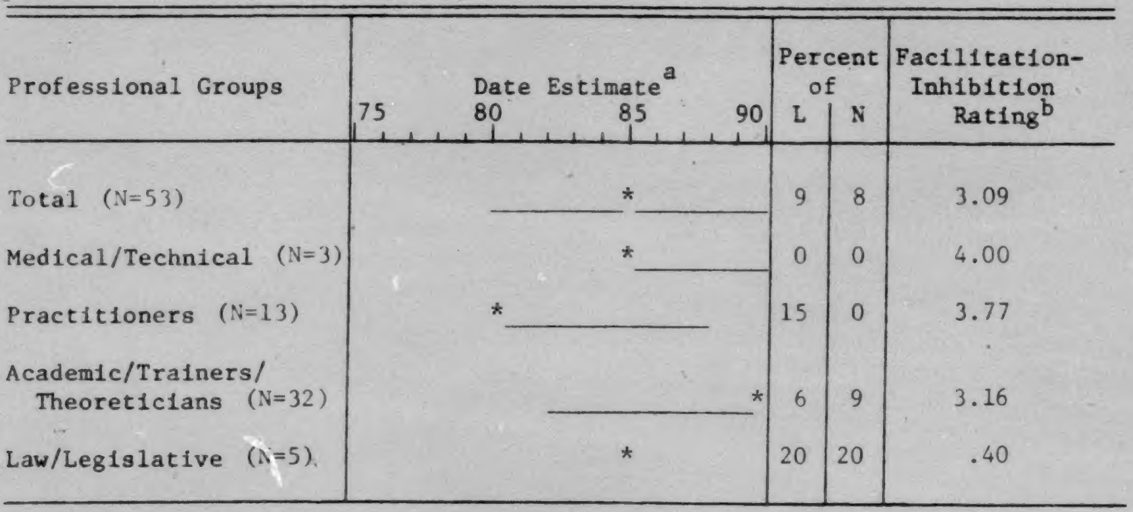
Litigation is slow and its impact into the hinterlands of resistance and pressure is even slower! Look at the women's movement, for example.

It will take longer for the public to reach that level of acceptance.

Event 42

Societal Values and Public Opinion

Since public school education now provides services to individuals from birth to death (as seen in the community school concept), appraisal services are no longer narrowly focused upon a child's academic achievement.



Professional Groups	Date Estimate[a]	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	*	9	8	3.09
Medical/Technical (N=3)	*	0	0	4.00
Practitioners (N=13)	*	15	0	3.77
Academic/Trainers/ Theoreticians (N=32)	*	6	9	3.16
Law/Legislative (N=5)	*	20	20	.40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 42

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

I believe we are here already and it will be evident before 1980.

Believe academic skills will continue to be seen as "central" to other competencies of students and adults through 1990.

Dreamers! 1980 is only 5 years away. No way.

1977, I believe, is far enough for something that is already happening.

It will take several decades to achieve life-long services including appraisal.

School focus on academic achievement is the school's job and is not narrow.

Academic achievement info (reading-arithmetic) needed for job placement.

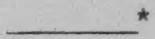
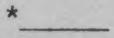
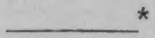
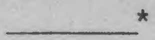
Some parents already are quite capable of interpreting records. Those who are not will be truants from your classes for parents. You won't get them to attend.

The educator's dream; but achievement is still something schools aren't much good at affecting.

Event 45

Societal Values and Public Opinion

Due to the consistent relationship of lower socioeconomic status with lower school achievement, the community school concept has emerged as an appropriate mechanism through which public schools can provide lower socioeconomic status families with enrichment opportunities ordinarily available to higher socioeconomic families.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=52)		6	6	3.02
Medical/Technical (N=3)		0	0	1.33
Practitioners (N=12)		0	0	3.67
Academic/Trainers/ Theoreticians (N=32)		9	9	3.03
Law/Legislative (N=5)		0	0	2.40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 45

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

1980 seems too far away for this well-developed notion to fully actualize.

Financial constrictions delay implications of such an expensive program.

This is a socio-political-economic matter which will be dealt with primarily through mechanisms other than public education.

Neighborhood schools are too important to the public. We won't adopt a community school concept.

Movement is catching on very rapidly already--why not by 1978? It'll be by 1980 just as easily, however.

Maybe, but outside variables will slow this down (i.e., community leaders, business.)

Current cutbacks in public school funding reflecting voter concern regarding taxes suggest lengthening time forecast.

Federal forces will eventually require a redistribution of wealth and enrichment opportunities.

I do not believe this will happen before 1990 due to other problems which are more pressing, legally and educationally.

I do not believe lower-class parents want a different program for their children. They want their children to enter the same colleges, occupations, etc., as middle-class children.

If funds are available, then increased, but not equal, full-scale opportunities may follow.

Event 46

Societal Values and Public Opinion

Societal values are acceptant of infanticide when either fetus or infant is determined severely abnormal; therefore, there has been a dramatic improvement in appraisal services for infants.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=52)	——*	27	37	- .90
Medical/Technical (N=3)	*	0	33	-4.00
Practitioners (N=12)	*	33	42	-2.42
Academic/Trainers/ Theoreticians (N=32)	——*	28	3	.38
Law/Legislative (N=5)	*	20	40	-3.60

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 46

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Second part of statement does not follow the first. Appraisal services may also be less valued since they will be less meaningful.

Legislation for infanticide will not be passed in this country in the foreseeable future.

Legal issues will tie courts for decades.

I think much of the work on this issue is being argued regarding abortion. The issue will either be well settled by 1978 or not for at least 10 years. So here I would stick with my original response or go to 1985.

Believe there will be continuing trend to save more handicapped babies through 1990.

Civil rights advocates will prevail on such an issue.

Doubtful if this will be legal for infant, though perhaps so for fetus, for a long time to come. Even so, improvement wouldn't be that dramatic.

The trend is the other way. We move heaven and earth to keep the fetus alive when the term and delivery are beyond "abortion" terms and condition.

The results of the Edelin case which came in after my Round II response only confirms my original prediction that people in this country are many years away from accepting infanticide for any reason.

Decades away, but possibly a worthy idea for remediation of the living.

I am working upon legal actions to see that this never happens.

There will remain a strong "right to life" movement which will prevail on the matter of infanticide.

Event 40

Event 40 relates to the reduction or elimination of pupil appraisal services as a function of depressed economic conditions, reduced numbers of school-age children, and zero-based state budgeting. A bimodal distribution on dates of occurrence was produced, with one group (63%) estimating occurrence very soon (median=1976) and the other group (37%) estimating that the event would never occur and that an appraisal staff would always be needed. The event was viewed as very undesirable and was to be inhibited by decision makers. The fact that the panel majority was very consistent in its date estimate (interquartile range=1976-1980) reveals some negative implications concerning employment possibilities for appraisal specialists within the next five years. Also, training programs, in order to reduce discrepancies between supply and demand for appraisal services, probably should curtail recruitment for five years but at the same time increase the technical training for those enrolled. In addition to reducing the number of appraisal personnel in training, training programs should be training persons in different skills such as have been referred to regarding litigation and legislation, organizational theory and systems, and the ability to synthesize appraisal.

Event 41

Event 41 deals with a decrease in litigation based upon societal recognition of responsibility to educate and employ the handicapped. The majority of participants estimate that this event will occur between 1980-1985, with a median date estimate of 1985. An implication of this event might be the continuation of litigation over the next 10 years to facilitate the occurrence of this event.

Event 42

Event 42 relates to schools' providing individuals with services from birth to death, resulting in appraisal services having a greater scope than just the academic achievement area. A wide interquartile range for date of occurrence (1980-1990) may reflect the panel's concern over increasing the school's responsibilities in delivering human services (viewed as undesirable and occurring later or not at all in event 14), as opposed to the recognition of increased pupil appraisal complexity.

Event 45

Event 45 deals with the public schools as a mechanism to provide enrichment opportunities to lower socioeconomic families that are seen as influencing school achievement. The participants rate the event occurrence between 1980 and 1985, with a median estimate of 1985. Approximately 88% of the group view the occurrence of this event as possible and one that should be facilitated by decision makers. A major problem with this event is the lack of definition for "enrichment opportunities," which could be interpreted as anything from free lunches to income supplements.

Event 46

Event 46 relates to societal acceptance of infanticide when the fetus of infant is determined severely abnormal. The majority of participants estimated the event would occur later than 1990 or not at all and rated the event as highly undesirable in its occurrence. This event is related to event 31 (involuntary sterilization of individuals with defective genetic structure) and was rated similarly. Both events 31 and 46 are highly value charged and probably will not occur, certainly within the next 15 years.

Area A

Litigation and New Legislation

Event 1

Litigation and New Legislation

Due to the Open Records Law of 1975, data gathered through pupil appraisal contains no individual personality, intellectual functioning, or family relations data.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	*	2	51	-1.87
Medical/Technical (N=3)	*	0	33	-2.67
Practitioners (N=13)	*————	8	69	-3.08
Academic/Trainers/ Theoreticians (N=32)	*	0	50	-1.97
Law/Legislative (N=5)	—*———	0	20	2.40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 1

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Prohibition of such data would severely curtail efforts of teachers and psychologists to provide individualized instruction.

I do not believe that basic evaluation data will be eliminated. The open records law will eventually make the public more aware of its values.

Objections to data collection become more or less intense at times due to numerous factors; however, there is usually a return to the mean.

Nature of data will change (i.e., become more objective; less normative), but will be present.

It will be modified, not eliminated.

Believe that this could occur but see odds as less than 60%. There are contrary trends: (1) more data to justify placements vs. (2) less "emotionally charged" data due to open records law. Believe opportunity to challenge data will lead to better but not less data.

In time less emphasis will be placed upon why skills vary and more upon specificity of variation, i.e., how does one learn best instead of why.

Program decisions will always require some data of the type mentioned.

These are critical data for student evaluation, and I believe that some such information is essential even though it would be on open records.

Such information will never be totally absent from all records, especially with emotionally disturbed and retarded children, as these data are necessary as a base line.

In order to render adequate specialized services to the total child, data related to all aspects of his world will be considered relevant.

Such data will continue indefinitely to be gathered through pupil appraisal. Some of the less sensitive material will remain in files for pupils and parents to see. More sensitive data will be destroyed or considered medically privileged.

Since such data aid in serving the child they will be collected in one form or another, in one guise or another, but will not be maintained in the child's record in the disadvantaging forms of past practice.

Just as public media have helped to promote open records in 1975, so also will media help promote the extent to which data regarding personality, intellectual functioning, and family relations can guide planning in future.

They may try, but need for such data, especially intellectual functioning, will result in some means to record information. The form may change, but the data will be in the records.

School curriculum should be based on student appraisal information. In the future as functional relationships are explored, assessment will become more important, not less. The public will be informed by school personnel of these results.

Court decisions are going to begin to support the legitimacy of such data. Civil rights decisions are going to swing back.

Data collection will only be more carefully done, knowing the files will be kept open.

Mass of litigation will force more prompt compliance.

Event 26

Litigation and New Legislation

Individuals improperly classified through appraisal processes may now recover punitive damages from the responsible appraisal specialist.

Professional Groups	Date Estimate[a]	Percent of		Facilitation-Inhibition Rating[b]
	75 80 85 90	L	N	
Total (N=53)	*__________	4	8	.74
Medical/Technical (N=3)	*	0	33	3.00
Practitioners (N=13)	__*_______	0	0	- .38
Academic/Trainers/ Theoreticians (N=32)	__*_______	6	6	.69
Law/Legislative (N=5)	*	20	0	2.60

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 26

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Legal process doesn't help recovery now and courts show no prospect of speeding or improving process.

Litigation to this effect is now reality. With the precedent set, rapidity of actions are likely to increase.

Policy makers will make the needed changes, thus preventing such occurrences.

To a certain extent, they may recover damages now.

Many people believe this to be true today, I assume. But it's very difficult to legally prove and recover punitive damages. Improper assessment practices.

I doubt if courts will go that far until appraisal is much more valid than it is likely to be in foreseeable future.

Although I still believe that to avoid this eventuality, procedures will be designed so it will be very difficult to establish the responsible specialist.

With malpractice suits against medicine as successful as they are, malpractice claims in education may not be far behind.

With the medical problems of malpractice insurance, it is likely that recovery is possible on educational and psychological misdiagnosis. (But date is within range.)

Punitive damages can never be recovered for mere negligence.

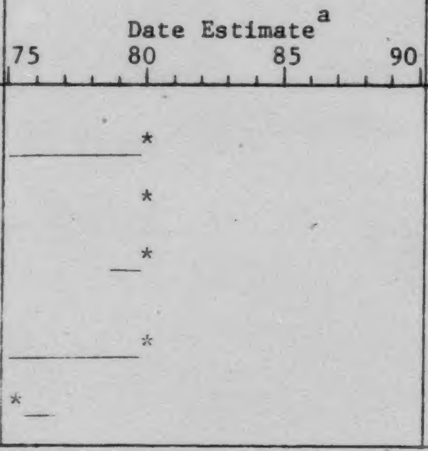
Precedent of Goss vs Lopez, Wood vs Strickland, and Peter Dee vs San Francisco will expand to other areas of neglect by educational institutions and personnel.

Maybe even earlier, given Wood decision.

Event 27

Litigation and New Legislation

The extensive litigation, court rulings, etc., which occurred in the mid-seventies have resulted in complicated inefficient procedures for pupil appraisal in public schools.



Professional Groups	Date Estimate[a]	Percent of I	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)		0	25	-2.19
Medical/Technical (N=3)		0	0	- .33
Practitioners (N=13)		0	23	-2.00
Academic/Trainers/ Theoreticians (N=32)		0	25	-2.75
Law/Legislative (N=5)		0	40	- .20

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 27

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

I have difficulty in the interpretation of complicated, ineffecient procedures. Complex, multidiscipline--could be. Complicated inefficient--my answer would be soon, not never.

Should yield more effective procedures.

Do not agree. Court procedures did not effect inefficient procedures; the procedures were inefficient prior to the court rulings.

Assessors continue to improve procedures for assessment regardless of litigation.

I think the courts will not go that far.

Assessment procedures will be sold honestly and with qualifications to the public, and the due process safeguards will result in more efficient use of professional time.

New systems will be developed to avoid inefficiency.

If anything, I believe more adequate appraisals will result.

My colleagues' responses here concern me. This is a vital area. Litigation does not cause inefficient procedures in schools. (1) courts are very reluctant to rule as to professional procedures, and (2) schools may well misunderstand court holdings. That is the school's fault, not the court's.

Good legal rulings are coexistent with good educational principles.

I disagree that the consequence of protection of student rights (e.g., privacy, tests, appraisal) will severely inhibit appraisal practices, but will make them more efficient and appropriate.

It's here.

Event 25

Litigation and New Legislation

Court rulings censuring public schools for utilizing inadequately trained pupil appraisal personnel have resulted in public schools seeking higher trained appraisal specialists.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	* ——	0	4	3.02
Medical/Technical (N=3)	* ————	0	0	2.33
Practitioners (N=13)	———— *	0	0	3.46
Academic/Trainers/ Theoreticians (N=32)	* ————	0	6	2.88
Law/Legislative (N=5)	*	0	0	3.20

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 28

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

There are enough class action suits already litigated in favor of the children and youth to justify offering quality services in this area.

Prediction already fulfilled.

I believe pupil appraisal personnel are as skilled as can be expected considering current problems of appraisal.

In California it is already going on sporadically.

It's almost here.

Event 29

Litigation and New Legislation

Federal legislation has created a national agency to certify psychological tests in order to prevent the publication and use of tests not meeting rigorous validity and reliability standards.

Professional Groups	Date Estimate[a]	Percent of		Facilitation-Inhibition Rating[b]
	75 80 85 90	L	N	
Total (N=53)	*————	8	17	1.60
Medical/Technical (N=3)	*	0	0	1.00
Practitioners (N=13)	———*———	0	23	1.62
Academic/Trainers/ Theoreticians (N=32)	*————	13	16	1.72
Law/Legislative (N=5)	*————	0	20	1.20

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 29

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Resistance by professional and educational organizations will defeat legislation.

Professionals will act before there is the need for a federal agency.

We can have the agency, but I believe that it is doubtful that we can prevent publication of lousy instruments.

Internal monitoring, see development of ETS, will do the job.

Defederalism is emerging.

With individual human rights movement, this could potentially occur even before 1980.

Unlikely in foreseeable future.

May prevent use of tests, but to prevent publication of tests infringes on rights of free speech. Standards may require certain reliability and validity data before a test can be used, but not before it can be published.

Diminishing confidence in formal "psychological tests" and the increase in range of methods by which characteristics, needs, and skills are assessed will make it unlikely that enough political force will exist to pass federal legislation of the kind and for the purpose described.

Goes against capitalistic democratic principles.

Law makers will never get that well organized for decades. Not a clear-cut issue.

Such legislation is presently so needed that current trends and pressures will bring this about in next few years.

Event 30

Litigation and New Legislation

Legislation now requires mandatory reporting of handicapped children to public schools by other agencies and professionals.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	*———	2	15	2.17
Medical/Technical (N=3)	*	0	33	2.33
Practitioners (N=13)	*———	0	0	3.08
Academic/Trainers/ Theoreticians (N=32)	*———	3	16	2.19
Law/Legislative (N=5)	*——————	0	40	- .40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 30

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

This doesn't require mandatory reporting to schools. Don't they know?

Current legislation makes the public school responsible for identifying and serving all handicapped children ages 3-21 now. Public schools tend to become the coordinating or flow-thru agency for such services.

This is an improper way for the government to intervene and so such legislation will not be enacted.

Individual rights movement would not allow this.

I don't think public schools will be that central except in an authoritarian society of an unusual kind. That runs against American values.

Will be resisted on a "right to privacy" basis.

There are serious legal problems with such a procedure, unless comprehensive due process safeguards are attached.

Child abuse reporting legislation will serve as model in reporting of handicapped children.

Confidentiality requirements will prohibit anything but advising referral to parents.

Event 43

Litigation and New Legislation

The Open Records Law has resulted in the necessity of schools providing training to parents in the interpretation of school appraisal procedures and results.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	 N	Facilitation-Inhibition Rating[b]
Total (N=53)	____*________	0	9	2.98
Medical/Technical (N=3)	*________	0	0	3.00
Practitioners (N=13)	____*________	0	8	2.85
Academic/Trainers/ Theoreticians (N=32)	____*________	0	13	2.84
Law/Legislative (N=5)	*	0	0	4.20

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 43

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

This is happening now.

The need already exists. Even the 1977 date I gave is a concession arising from the fact that though the need is already there, the political "necessity" has not yet impressed itself on most school systems.

I really don't believe the schools care whether parents understand or not. Future legislation might bring this about, but I don't read it in Open Records Law per se.

Will happen very soon pursuant to federal laws.

It already is occurring but not in mass fashion.

Event 44

Litigation and New Legislation

Due process procedures necessary for legal pupil appraisal are so expensive and time consuming that schools operate special education services only for the most obviously handicapped students.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	__*_______	4	49	-2.58
Medical/Technical (N=3)	*_______	0	0	-4.33
Practitioners (N=13)	*	8	62	-2.62
Academic/Trainers/ Theoreticians (N=32)	_____*_________	3	47	-2.88
Law/Legislative (N=5)	*	0	60	.40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 44

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Procedures require training which is not necessarily that expensive; also due process relates to violation of rights not to provision of services.

Special education programs may change in name and format due to pressures, but they will continue to exist because children will continue to exist who are not able to learn in regular classes even if they are not obviously handicapped.

Either all education will eventually become "special" or percent of special education will increase.

Policy makers can and will evolve feasible procedures to prevent such an occurrence.

Insistence that the needs of all children be met by the public schools will continue.

Special education services will continue to serve even those mainstreamed.

Have strong belief that due process procedures necessary for pupil appraisal will be provided even if they are expensive and time consuming.

Schools will learn to handle their responsibilities better and work in partnership with parents more effectively so they will not retreat from their obligations in the way described. The less obviously handicapped must be served also and have a right to the same due process considerations, so this is no "out."

Due process procedures, since instituted, have been used very little in Ohio and other states with which I am familiar. Good appraisal procedures involve the parents from the beginning, are not unnecessarily cumbersome, and result in good PR.

Good work by public school personnel results in the need for very few due process hearings.

Analysis, Synthesis, and Interpretation of Events
Litigation and New Legislation

Event 1

Event 1 concerns the effect of the Open Records Law on the gathering of pupil appraisal data. It has a bimodal distribution between participants who say the event will occur by 1980 and those who say it will never occur. Such a distribution may imply that Event 1 is highly controversial and value charged. The total group facilitation-inhibition rating was negative, so panelists do not want the event to occur. It seems that panelists still want to gather individual assessment data, but the Open Records Law may have one of two results: the continuation of such data gathering or the termination of such records as represented by the 1980 estimate.

Law/Legislative was the only group to view the event in a favorable light; an implication might be that intent and application of the law remain confused. The procedures by which such data is collected and maintained may change which would meet the intent of the law rather than total expunction of various types of data needed for appropriate individual instruction.

Events 26, 27, 28

Events 26, 27, and 28 all deal with legal processes, litigation, and court action resulting in changes for the pupil appraisal process. Date estimates for all three events were consistent, with very little shifting from round to round. The median date estimate for all three was 1980. Event 27, dealing with extensive litigation resulting in complicated inefficient procedures for pupil appraisal in public schools, resulted in 25% of the participants rating the event as never occurring. The Law/Legislative group was somewhat split on its date estimates, which ranged from never occurring to occurring within the next two years. Possibly the group agrees that such litigation is upon us now but disagrees that it results in inefficient procedures for pupil appraisal in public schools.

Conversely, the participants thought event 28 would result in public schools seeking more highly trained appraisal specialists, with only 4% of the group saying this event would not occur. Furthermore, the participants estimated the occurrence of this event to be relatively soon (1980 was the median estimate). An additional implication would be the increase or expansion of the kind of appraisal personnel that can be supported through foundation school programs or state support for personnel positions demanded by the courts.

Events 29, 30

Events 29 and 30 deal with the influence of legislation on the publication of assessment instruments and the reporting of handicapped children to public schools by other agencies and professionals. These events have a median date estimate of occurrence of 1985 and 1980 respectively. Both events are seen as positive events to be facilitated by decision makers. Event 29 appears to be favored as far as occurrence is concerned, but time and method of initiation seem ambiguous in light of participant rationale for remaining outside the interquartile range. It seems that greater control over psychological test publication in the form of higher standards is desirable, but how to do this seems nebulous. By 1980 the majority of participants predict a widespread effort in locating handicapped students will be under way as a cooperative effort between agencies and professions.

Event 43

Event 43 deals with the effect of the Open Records Law necessitating public schools to provide parental training in the interpretation of school appraisal procedures and results. This event was rated to occur in a relatively short period of time (interquartile range=1978-1985), with a median date estimate of 1980. The facilitation of this event by decision makers was very positively rated by panelists.

Event 44

Event 44 refers to due process procedures being so complicated and time consuming that schools operate special education services only for the most obviously handicapped students. A bimodal distribution of date estimates occurred, with more than 50% of the participants estimating the event would occur later than 1990 or never and the other 47% saying that it would occur around 1985. Some participants said we will always serve the mildly handicapped, while others responded that the due process procedures would result in better pupil appraisal, not more complicated or time-consuming procedures. The event is probably confounded by the dual elements of not serving mildly handicapped and the effects of due process on pupil appraisal procedures. The majority of the Law/Legislative group rated the event as never occurring, in that due process procedures have enhanced the appraisal process.

Area B

New Medical Procedures and Drug Applications

Event 31

New Medical Procedures and Drug Applications

Involuntary sterilization is required of individuals with defective genetic structure.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	___*	28	53	-1.98
Medical/Technical (N=3)	*	0	66	-4.67
Practitioners (N=13)	*	54	38	-1.08
Academic/Trainers/ Theoreticians (N=32)	*	25	53	-1.71
Law/Legislative (N=5)	*	0	80	-4.40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit event occurrence.

Event 31

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

The civil rights and individual liberties movement will still be prominent. A radical change in thinking and in legislation would be required prior to any such event.

Present trend of "normalization" and "constitution of rights" indicates this will not occur by 1990.

This is a recurrent issue, and the day may indeed come, but not before 1990.

Courts don't change that fast. A lot of precedent will have to be overcome. If I didn't know the cases and recent trends, I would agree to the optimists.

Sterilization involves religious ethics in some cases. Separation of religion/governmental-social concerns suggests involuntary sterilization programs will be instituted only as population and tax support pressures demand consideration beyond individual ethics.

Civil liberties influence is too strong to permit such an infringement on individuals' rights.

I do not believe it would be politically possible in this country to pass legislation requiring sterilization of individuals with "defective genetic structure" unspecified as to type or probably even specified. At least I hope it wouldn't be.

Need to define "defective genetic structure." Probably no one with "perfect" genetic structure. Statement not well phrased.

Courts would never uphold such a law.

Maybe a little longer but push will still continue.

Public pressure will be maintained to prevent this, subject only to possible movement toward fascist-type government or severe national crisis.

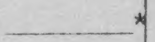
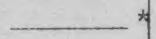
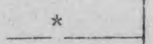
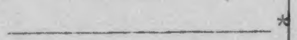
Legal actions will prevent this.

Requires highly authoritarian society and much greater understanding of genetics.

Event 32

New Medical Procedures and Drug Applications

Advances in medical technology (improved pre- and postnatal care, genetic counseling, etc.) has significantly reduced the number of handicapped students entering school.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)		15	9	3.98
Medical/Technical (N=3)		0	0	4.33
Practitioners (N=13)		31	8	3.92
Academic/Trainers/ Theoreticians (N=32)		9	13	4.03
Law/Legislative (N=5)		20	0	3.60

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 32

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

This will be more than offset by increasing malnutrition, ozone in atmosphere, pollution rashes, psychosomatic illness, ad infinitum.

Medical technology seems more able to achieve survival--not quality of life--for those who survived. Not enough number of readily available counseling centers. Too soon to estimate really.

Trend recently is to increase number of handicapped (medical advances are saving children who used to die). Think this trend will continue for awhile and event may come after 1990.

The evidence is already here, and growing. Something significant should be evident soon.

It is already happening. What is abortion about? If we include abortion as an "advance," then change my answer to L.

Advances in medical technology do not cover individual choice, i.e., use of drugs, accidents, refusal to submit to genetic counseling, etc. Not until public opinion, population pressure, and tax pressures force compliance do reductions reach significant levels.

The facts tend to go the other way, e.g., we learn how to keep the defective alive.

Same advances will keep more defective neonates alive to enter school.

Advances in medical care have been shown to decrease deaths and increase number of handicapped children.

Cutting back on medical research and lack of knowledge to make a significant impact.

Such technology has, in the past, increased, not decreased, the number of handicapped children. (Those who previously had not survived now live.)

This has already happened in the area of sensory improvements.

Already happening.

It is already beginning to happen.

Event 33

New Medical Procedures and Drug Applications

With the common use of drugs to improve behavior and learning, appraisal processes are required to monitor medicated students.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	_______*___	11	15	1.49
Medical/Technical (N=3)	*____	0	0	2.33
Practitioners (N=13)	*___	8	15	.31
Academic/Trainers/ Theoreticians (N=32)	_______*_____	16	13	2.41
Law/Legislative (N=5)	*___	0	40	-1.80

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 33

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

I do not foresee the common use of drugs in controlling behavior and learning, especially the latter.

Courts are soon to act decisively to restrict the use of drugs for purposes now in use in schools.

With at least 50% of students now medicated, it seems impossible to monitor that many people.

"Common use of drugs"--now available, in use--"appraisal monitoring"--not now demanded. Must convince dispensers of drugs of need. Suggesting to A.M.A. that psychologists might monitor medication will call for A.M.A. cooperation not presently available. Recent advances suggest it will come.

This is already happening with regard to behavior--ritalin, etc.

Is the key word here "required"? Does that mean legally required? Is not constant appraisal (both medical and educationl) "required" now of both the prescribing physician and teacher if they are to act responsibly in relation to medicated pupils?

Unlikely we'll have practical use of drugs to improve learning very significantly till later.

No drug yet has any demonstrated effect upon learning. Drugs are over-rated for behavioral and psychiatric effectiveness.

Drugs will be eliminated as a major "educational" tool.

Drugs are being used commonly (although the efficacy is in question) and processes are needed now to monitor medicated students.

I hope the trend toward medication will be reversed.

Event 34

New Medical Procedures and Drug Applications

Effective medication controls 80% of the handicaps ordinarily present in children identified as "high risk" in infancy.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	——— * ———	25	43	1.11
Medical/Technical (N=3)	*	0	66	- .67
Practitioners (N=13)	* ———	31	46	.85
Academic/Trainers/ Theoreticians (N=32)	* ———	28	44	1.28
Law/Legislative (N=5)	*	0	20	1.80

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 34

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

I think it will come, but not in the next 15 years. Too much basic metabolic research is required to permit such an event before 2000.

Can't predict emerging new disease-causing elements in environment. There will be many.

"High risk" status results from the combination of many different factors, many of which cannot be controlled by medication, e.g., emotional and social factors, malnutrition, etc.

Don't believe medical breakthroughs to this extent will happen by 1990.

More mild "high risk" infants are identified yearly--accuracy of physiological intervention increases yearly.

Research in medicine is not even currently directing sufficient funds and expertise to this problem. If and when appropriate effort is made, longitudinal research will be needed.

Utilization of drugs to control behavior currently questioned; indications are that legal issues will arise.

Drugs will never be this good in my opinion.

New Medical Procedures and Drug Applications

Event 31

Event 31 relates to involuntary sterilization for individuals with defective genetic structure. Viewed as a very undesirable event, more than 80% of the participants related this event as occurring later than 1990 or not at all. Of interest is the fact that trend analysis has indicated the movement toward eugenics and sterilization is cyclical, occurring regularly throughout history approximately every 20 or 30 years.

Event 32

Event 32 deals with advances in medical technology which reduce the number of handicapped students entering school. The participants rated this event as highly desirable in occurrence, but occurring rather late, with a median date estimate of 1990. More than three fourths of the participants felt this event was possible.

Event 33

Event 33 deals with the use of drugs to improve behavior and learning, requiring appraisal processes to monitor medicated students. This event was viewed as desirable as it was positively rated. The median occurrence date was estimated to be 1985, with 15% of the participants saying the event would not occur.

Event 34

Event 34 deals with medication controlling 80% of the handicaps ordinarily present in children identified as "high risk" in infancy. The majority of participants rated the occurrence of this event to be later than 1990 or not at all. Furthermore, 66% of the medical/technical group felt this event would never occur.

Area B

Computer Technology, Inventions, and Technical Breakthroughs

Event 18

Computer Technology, Inventions, and Technical Breakthroughs

Computer-managed educational programming now match teacher characteristics with student learning needs.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	————*	28	17	1.89
Medical/Technical (N=3)	*	0	33	.67
Practitioners (N=13)	—*————	38	0	2.08
Academic/Trainers/ Theoreticians (N=32)	————*	28	19	2.06
Law/Legislative (N=5)	*	20	40	1.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 18

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Will be extremely difficult to obtain information on teacher characteristics.

Financial reasons.

Technology is here.

Unless the resources needed to accomplish this increase radically, it will take a lot longer than 15 years.

We will not have sensitive enough measures to tap these traits for many years.

Or at the least later than 1990. We won't be able to assess or describe "pupil needs" with an adequate degree of reliability.

Fine idea theoretically, but many years away in practice since research base and technology not yet established.

Too expensive for school budgets.

Teacher characteristics crucial to child learning are still to be identified. (Note the lack of success in trying to identify the characteristics of "good teachers.") Student learning needs change continuously. The whole business of trying to match teacher characteristics and pupil needs is very difficult, needs much research before computerizing.

We'll need a lot of research but this is promising territory. Even after the research, implementation will be tough.

Cost prohibitive.

It will be some time before we have any confidence in matching "teacher characteristics" with student "needs."

Do not believe computer can replace teacher. Need human touch for self-concept and feelings of self-worth.

We will not have identified the teacher variables responsible for child gains by 1990.

Too many interacting variables of variable weights to achieve this for individuals.

Event 18 (continued)

I suspect we overestimate the powers of the computer. Who decides which characteristics of teachers and pupils are complementary?

Can't do it by hand individually, let alone with fancy technology.

Event 19

Computer Technology, Inventions, and Technical Breakthroughs

Computers now complete 80% of pupil appraisal through interface with biofeedback instruments, resulting in the synthesis, analysis, and profiling of appraisal data.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	 N	Facilitation-Inhibition Rating[b]
Total (N=53)	*	30	30	.38
Medical/Technical (N=3)	*	33	0	1.00
Practitioners (N=13)	*	31	15	.77
Academic/Trainers/ Theoreticians (N=32)	*	28	41	.44
Law/Legislative (N=5)	*	20	40	-1.40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 19

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Computer technology is here now, but it will take many years for us to acquire the knowledge base on which to base computer programs. We need 25 years of solid learning research to acquire such knowledge.

The sophistication of our computers will certainly increase and pupil appraisal will have to relate to it. I believe 1990 is too soon, however, for the premise presented.

Insufficient data to reasonably expect such proliferation of computer techniques.

Don't know if cheap technology will be available by 1990. Even if it is, the public may not accept it by then.

Computers may assist in appraisal, but they will only act in a supportive function.

Biofeedback techniques will be developed for special categories of children, but cost factors prohibit use in general classroom.

The nation will not be technologically that advanced and priorities will not accept these.

Much of pupil appraisal will always be "clinical" analysis--that can't be computerized.

No adequate research and technology base as yet.

If this is near enough to being validly realizable by 1990, I obviously don't know this research. We can go the computer route on a lot of partially validated approaches, but I hope somewhere along the way we're going to choose our approaches with cost/effectiveness evidence in mind.

Biofeedback on complex cognitive performance may never be realized.

Cost prohibitive.

This is on the way in laboratory operations in institutional (U.S.A.) settings. Will take 25 years or more to become common: cost, public support.

You have to know critical variables to feed into computer--we do not know them.

Event 19 (continued)

There would have to be a totalitarian approach to all schools' policies.

80% too high. Some of this is occuring, but not 80% ever.

Overestimate of progress in computer technology.

Event 20

Computer Technology, Inventions, and Technical Breakthroughs

The cost and time of pupil appraisal has been reduced 50% by simultaneously appraising large groups of students through the use of time shared computers.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=52)	______ *	25	6	1.54
Medical/Technical (N=3)	*	33	0	-.67
Practitioners (N=13)	* ______	23	8	2.46
Academic/Trainers/ Theoreticians (N=31)	______ *	26	6	1.81
Law/Legislative (N=5)	*	20	0	-1.20

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 20

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Current trends in front-ending large computers with minicomputers to increase availability and compute horsepower in time share environments.

Doubtful that we'll be so efficient with programming computers to reduce 50%.

Complexity of human behavioral phenomena remains individual in nature despite technological advances in handling large numbers.

1982 is long enough to have to wait for this clearly needed data source. It will probably be available sooner.

Time-share computers will always have high overhead costs within this century, unless dramatically new innovations in hardware occur.

Good idea and probably feasible, but technology is not yet developed to cost-effective level and it is uncertain how public will react.

Well, OK. I'll give a date, but I hope that it's being done, because that seems (on the basis of hard data) to be the most economic and effective way to go about meeting the need.

Lots of technical problems.

Estimate this will be the case, but 10-15 years too short a time to be implemented, e.g., available for 10 or more years, but in use in only a few places.

Many good group procedures already available.

Other attitudinal issues may be reduced as significant barriers due to continue resource scarcity. This may come faster.

Cross appraisal only.

Event 2i

Computer Technology, Inventions, and Technical Breakthroughs

Appraisal data is maintained in state-operated computer banks, thus providing school districts, state agencies, and legislators with composite, discrete data for decision-making purposes.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	*________	8	13	.85
Medical/Technical (N=3)	*	0	33	-.33
Practitioners (N=13)	*___	8	8	1.85
Academic/Trainers/ Theoreticians (N=32)	*________	6	16	.94
Law/Legislative (N=5)	________*________	20	0	-1.60

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 21

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Don't believe our sophistication or precision will be good enough for the necessary prosthetic or analytic efficiency.

Perhaps I'm misreading appraisal data, but such systems at first glance smack of constitutional rights violations.

The country is going to move away from "data banks."

There will be increased pupil resistance to big data banks on children as well as adults; therefore, I don't think this will be achieved unless risks are eliminated.

We have this now!

Lay pressure will prevent such data storage.

Not on individuals. Civil libertarians won't permit it!

No chance--invasion of privacy legislation.

Instead of "never," a "later" designation is offered as state school systems may integrate sufficiently to handle such data.

I suppose it can happen if data is "composite, discrete."

Unless privacy interests are held to outweigh information interests.

Event 22

Computer Technology, Inventions, and Technical Breakthroughs

A variety of sophisticated prosthetic devices and computerized input-output devices now enable 80% of all physically handicapped children (motor, blind, deaf, etc.) to function adequately in regular education programs.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	________*	32	8	3.60
Medical/Technical (N=3)	*	0	33	1.00
Practitioners (N=13)	*________	23	8	3.85
Academic/Trainers/ Theoreticians (N=32)	________*	38	6	3.69
Law/Legislative (N=5)	*________	40	0	4.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 22

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Technological advances will not be able to overcome the many additional problems (e.g., emotional, learning disabilities, etc.) that beset physically handicapped children.

Doubt that cheap technology will be available by that time for CP, muscular dystrophy students. May be for deaf and blind.

The technology is not that near on the horizon.

Unless resources needed to accomplish this increase radically, it will take longer than 15 years.

The model teachers and children will resist such children and the technology. (I worked with C.P., M.R.E.D. -- 3,000 cases.)

Highly desirable, but cost-effective technology is undeveloped as yet or in near future.

This is a pipe dream contradicted by physical limitations.

If technology experiences rapid successions of "break throughs" it may be accomplished by 1990--but the year 2000 is probably more realistic for all types of physically handicapped.

Why do so many of these statements make the condition dependent upon utilization of computerized system? If you leave out the phrase "and computerized input-output devices," I'll give the date 1985 because I think most children who are only physically handicapped are already functioning adequately in regular classes. I simply don't know enough about the state of "computerized input-output devices" development to predict on that basis.

Lots of technical problems.

Technology and financial support not available before 1990.

To be desired 1985-90, but not to be achieved. Must be governmental support. Current national priorities do not rank this high.

Not sufficient R & D funds are being given to allow development.

My view is that seriously disabled children will not, in the foreseeable future, be able to respond successfully to normal classroom exposure.

Event 23

Computer Technology, Inventions, and Technical Breakthroughs

With 80% of schooling now provided in the home through the use of sophisticated technology (cable t.v., computers, holography, etc.) continuous precise student appraisal is essential in the delivery of appropriate educational services.

Professional Groups	Date Estimate[a]	Percent of		Facilitation-Inhibition Rating[b]
	75 80 85 90	L	N	
Total (N=52)	_*___	33	48	-.65
Medical/Technical (N=3)	*	66	0	2.67
Practitioners (N=13)	*	46	31	-.38
Academic/Trainers/ Theoreticians (N=31)	*______	16	65	-.97
Law/Legislative (N=5)		80	20	-1.40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 23

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

It will take more than 15 years to develop appropriate knowledge data bases. Technology is not the problem; knowing what to do with the technology is the problem.

As homes become smaller and families less stable, children will spend more time in school, not less.

I cannot foresee home instruction at 80% and the "continuous precise student appraisal." Therefore N.

I question the assumption that 80% schooling via home setting by 1982-90.

Very little empirical evidence is currently available to indicate a desire to educate children at home and that adequate adult supervision is possible.

Don't think public will accept mostly home instruction by 1990--more working mothers, etc.

Schools will never abandon the classroom for 80% of kids.

Where is CAI now. Nowhere in terms of practical utilization on a large scale.

This is not a desirable goal and policy makers will not allow it to happen.

Here again human factors rather than technological sophistication will inhibit this achievement.

Social components of school, working parents, and cost factors drastically delay this development.

Because of socialization training this much formal education will never occur in the home.

Continuous precise student appraisal not now possible and very unlikely in future, even granting the likelihood of good delivery system to home.

Parents won't want kids home all day.

Do not think first part of statement well constructed--80% of "after hours" schooling may occur in home--but need for peer interaction, group experiences, lab equipment, etc., will preclude removal of 80% of schooling from school to home.

Event 23 (continued)

I don't believe such schooling will be possible because of the need for individual attention and teacher appraisal.

It might occur but if so, after 1990.

Need for schools as an institution and for interface in organized activities will continue.

What will happen to all those teachers?

Time projection too short given national educational priorities in next 15 years.

Event 24

Computer Technology, Inventions, and Technical Breakthroughs

Psychophysiological hardware is available to monitor and modify attentional processes so that information will not be presented when a child is bored.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	 N	Facilitation-Inhibition Rating[b]
Total (N=53)	______ *	42	23	.21
Medical/Technical (N=3)	*	33	0	-.33
Practitioners (N=13)	*	54	8	1.08
Academic/Trainers/ Theoreticians (N=32)	______ *	34	32	.03
Law/Legislative (N=5)	*	60	20	-.60

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 24

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Expense of "wiring" every child is not warranted by the relatively small increase in efficiency of learning.

Too costly and unrealistic.

The hardware capability is already here, but it will be beyond 1990 before it can be used fruitfully as the premise suggests.

This would require a radical change in attitudes toward the learner both on the part of professionals and parents. Value recognized, but pragmatism questioned.

Impact of basic science on education moves more slowly than this.

More variables to be considered than not to present information when child is bored, e.g., how to elicit and maintain child's attention, how to motivate child, etc.

Both knowledge and resources are too limited to accomplish this in 15 years.

People--not machines--must decide the state of the child for teaching purposes. Hardware may help but cannot determine.

Of research interest but unlikely to find wide application in this form.

If the statement would say that instruction will not be presented when a child is not attending, I'd give a date, but I'm too cynical to think teachers would never present instruction when a pupil was "bored."

It's almost 1990 now. It won't happen that soon. Technical developments required are complex and expensive.

Psychophysiological hardware of this sophistication will not "accept" and respond to "boredom." Alternative display will interrupt presentation when monitored attentional responses.

Nonsense. Children would have to be rigged up for EEG-type readings.

I do not believe the value system of the U.S. will ever change to the degree that this type of hardware will be used other than experimentally.

Question economic and/or technological ability to bring this about--and the probability of sufficient motivation to do so.

Such controls will never be permitted constitutionally in public schools.

Event 25

Computer Technology, Inventions, and Technical Breakthroughs

Since the relation of nutrition to cognitive, motor, and emotional development is known, nutritional appraisal is emphasized in individual pupil appraisal.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	*———	21	2	2.96
Medical/Technical (N=3)	*———	0	0	3.67
Practitioners (N=13)	*	15	0	3.31
Academic/Trainers/ Theoreticians (N=32)	*———	25	3	2.81
Law/Legislative (N=5)	———*	20	0	2.60

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 25

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

I can't see that the relationship of nutrition and cognition will be known before 1990.

Don't currently have such specialists and may not by then. Clearer relationships between day-to-day nutrition and learning is first step to this event.

Since nutrition is adequate for most children, even S.E. children, how can this be?

We give lip service to the importance of nutrition, but we will not be very concerned about extra-school variables in our school assessment.

Recent discussions with nutrition chemists at UT lead me to believe nutrition appraisal for everyone is not far away--but it may not be part of pupil appraisal. Relation to cog, motor, emotional development still unknown.

Studies to shed light on the efficacy of nutritional appraisal by individual (not for groups) will not be available in the detail sufficient to permit this.

Social implications of this projection suggest year 2000 or later for its implementation.

Data collection may never be that wide and accessible.

Analysis, Synthesis, and Interpretation of Events
Computer Technology, Inventions, and Technical Breakthroughs

Events 18, 19, 20

Events 18, 19, and 20 deal primarily with the use of computer technology in assessment procedures. The participants were very consistent in estimating that the application of computers to assessment will occur relatively late, if it occurs at all. The median date estimates for these events was 1990, and up to 60% of the participants estimated the events would occur later than 1990 or never.

Possibly the participants do not like to see the advent of electronics into the general area of assessment and educational programming. The historical reluctance of public schools to adopt and fully utilize computer hardware that is available may also be influencing the panel.

Event 21

Event 21 deals with computer technology in the form of appraisal data management, collections, storage, and retrieval as maintained in state-operated computer banks. Such data would be accessible to school districts, state agencies, and legislators for decision-making purposes. The median date estimate was 1985, which was much more recent in terms of other date estimates of computer technology, with 87% estimating this event will occur. The use of computers in this event may be viewed as a policy-making, management strategy, while the preceding three events were directly related to the assessment and programming of individual students. Possibly the participants do not wish to see the computer take over some human functions associated with teaching and assessment, but they are willing for the computer to assist in functions relative to management, decision making, and other administrative areas.

Event 22

Event 22 deals with sophisticated prosthetic devices with computerized input-output devices allowing 80% of the physically handicapped children (motor, blind, deaf, etc.) to function in regular education programs. The participants viewed this event as highly desirable in occurrence but saw it as occurring relatively late, with a median date estimate of 1990. Most of the participants did feel the event would occur, since only 8% estimated that it would never occur. The implication for this event is that participants judge it feasible and if a significant research and development effort was initiated the time estimate might be realized, if not reduced.

Event 23

Event 23 deals with the majority of schooling provided in the home through the use of sophisticated technology (cable t.v., computers, holography, etc.). The majority of participants (77%) said that this event is not going to occur or if it does happen, it will be later than 1990. The participants perceived the event as undesirable, indicating that decision makers should inhibit the occurrence of this event. In a way, the participants' responses to this event are confusing in that there are other types of occurrences that seem to be facilitating this event. For example, an FCC regulation states that all cable now installed must be capable of two-way interaction. An interactive microwave communication system allows conference calls, demonstrations, and exhibitions which can be viewed, heard, and interacted with from more than one geographical location. However, the point can be made that individuals responsible for implementing such a system, regardless of the technological sophistication, may be resistive to utilizing the system.

Event 24

Event 24 deals with the use of psychophysiological hardware to monitor and modify attentional processes so that information will not be presented when a child is bored. The occurrence of this event is rated at 1990, with two thirds of the participants suggesting that it will never occur or will occur later than 1990.

Event 25

Event 25 deals with an emphasis upon nutritional appraisal. Panelists rate this event as occurring within the next 10 years and state that it should be facilitated by decision makers. However, 23% say it will occur later than the 1975-1990 time frame. The medical/technical group's estimate was within the 1985-1990 time frame.

Area C

Placement and Classification

Event 10

Placement and Classification

There is a shift from appraisal for admission to institutions to appraisal as a prerequisite for release from institutions.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	 N	Facilitation-Inhibition Rating[b]
Total (N=52)	________*	8	33	.78
Medical/Technical (N=3)	*	0	33	-.33
Practitioners (N=12)	*________	0	33	1.42
Academic/Trainers/ Theoreticians (N=32)	________*	13	30	.70
Law/Legislative (N=5)	*	0	40	.25

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 10

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Such exit appraisals are already quite standard. I hope the day never comes when it is possible to admit someone to an institution without appraisal.

Admission will require more strict appraisal (in terms of what has been attempted in local levels) for admission.

Don't believe that appraisal for admission to institutions will cease or decline greatly, but there may be a trend toward more appraisal for release.

I do not believe that appraisal for admission should be eliminated. Violates due process rights.

Foundations will have less, rather than more, decision-making power on release.

There will always be emphasis on both, but greater care to protect individuals and avoid overloading programs by focusing on admission.

With the de-emphasis of institutions, appraisal for admission will be crucial.

Historically we have proven the value of assessment prior to institutionalizing persons. I feel we won't give this up.

People will still need appraisal for admission although more emphasis will likely be placed on release.

If thinking of limited kinds of institutions, such as MR schools, youth detention, perhaps shift will occur sooner and be a good idea. But if thinking of public education, it is unlikely till much later. The admitting screen is too deeply embedded in our culture where institution is a deserved one.

There has to be some type of appraisal for admission to institutions; otherwise services would not be dispensed to those needing them. Also some method of determing diminution of need for services will be used as a basis for service withdrawal so both will be eased.

At best there will be an equipoise between admittance and release assessment. There will never be a shift which places greater weight on the latter, particularly as society becomes more cautious about money expenditures.

Event 10 (continued)

This shift places a greater training burden on the institution and must be neither willing nor able to accept it.

There will always have to be some criteria for admission, e.g., TMR not for college.

Society, which is conservative outside and inside the professions, will be very slow to accept deviations from the norm and will require institutions to contain people.

I see trends going in a direction just the reverse of this event.

This has a totalitarian ring, probably not consistent with the rights of students.

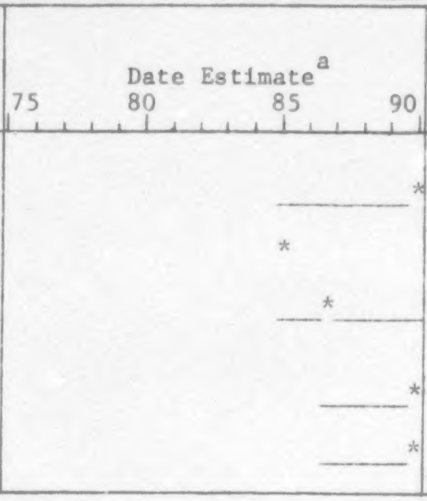
Continued push for deinstitutionalization continues to reduce flow into. Also, cry for more community services, need for early intervention should force this direction.

Moves counter to direction courts are going.

Event 11

Placement and Classification

The last residential schools for the blind and the deaf are closed.



Professional Groups	Date Estimate[a]	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)		19	43	.60
Medical/Technical (N=3)		0	66	.33
Practitioners (N=13)		8	46	0
Academic/Trainers/ Theoreticians (N=32)		25	47	.34
Law/Legislative (N=5)		20	0	4.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 11

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Individual philosophies are such that there probably always will be a small demand for private residential schools for deaf and/or blind. I would agree to consensus if referent were public residential schools.

We will continue to need some for patients as well as for teacher training.

As the number of blind and deaf children decreases schools will be unable to afford comprehensive programs for the small number of children who cannot be mainstreamed; special programs will serve large areas and will need residential facilities.

I believe this event will occur rapidly. Only unique multihandicapped blind and deaf will be utilizing residential units.

Due to the complexity of these handicapping conditions and the possible combinations that will in reality be multiple-handicapping situations, a protective environment will be needed for some.

Some children will need intensive services.

Bureaucracies never die except by staff infection, and that is slow poison.

Residential facilities will always be used for deaf and blind individuals.

While residential schools will serve more "hard-core" problems, they will remain with us.

Wish it could happen, but current societal values don't lead in that direction. It's too "American" to deny problems by putting out of sight and mind.

There will always be families who cannot accept handicapped children at home.

I do not think our communities can or will ever provide for blind and deaf children in community programs.

There will always be a need for residential institutions for the more severely debilitated.

They will be needed--not all people can be mainstreamed.

Event 11 (continued)

While many (perhaps most) will close by 1990, some specialized ones will continue indefinitely.

Will be used for multihandicapped deaf and blind.

Gap between technology and widespread application. Example: Scanners which "read" print for blind. Available, not yet accessible, to majority of those who could make use of device. Institutional schools will be around for another half century.

The need is real. These institutions include specialized programs for deaf-blind, e.g., beyond the capacities of nonresidential settings.

Financial problems will not pursue closing of such schools before the later date.

There will be some children who have no parents and who will be wards of the state.

Hasn't anyone read Bob Scott's The Making of Blind Men?

Events 10 and 11

Events 10 and 11 are related in the sense that they deal with placement and classification in institutions. Event 10 relates to a shift from appraisal for admission to appraisal for release from institutions; Event 11 deals with the closing of residential schools for the deaf and blind. Both events received somewhat bimodal distributions of time estimates: 33% of the panelists in Event 10 and 43% of the panelists in Event 11 said the event would not occur. The estimates did not shift very much from Round II to Round III, implying that both events will be very late in occurring or will not occur at all. Another implication is that the concept and availability of service through a residential institution will probably endure for an appreciably longer period of time than many people hypothesize, regardless of the community service delivery model.

Appraisal for release could also imply a change in the nature of a traditional institutional appraisal to one that defines an individual's strengths and weaknesses for placement in the community--on the job and/or in an educational setting (vocational, higher education, public schools, adult education community college, etc.).

Area C

Curriculum and Educational Programming Changes

Event 5

Curriculum and Educational Programming Changes

Vocational courses now enroll the majority of high school students; therefore, assessment now focuses upon specific skills needed for vocational proficiency.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	 N	Facilitation-Inhibition Rating[b]
Total (N=53)	______*_	2	28	1.62
Medical/Technical (N=3)	*	0	0	3.33
Practitioners (N=13)	*________	8	23	2.54
Academic/Trainers/ Theoreticians (N=32)	_*_	0	28	1.34
Law/Legislative (N=5)	*____	0	40	0

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 5

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

By 1986 less than the majority of high school students will be enrolled in vocational courses.

I doubt if our economy will sustain this eventuality. If our economic system changed drastically, I would say something else.

I recognize no such trends.

Vocational courses will never enroll the majority of high school students.

Wishful thinking to imagine that we can break out of the "college bound" tradition that soon.

It will take until 1990 for vocational classes to enroll the majority of students.

Higher education will become more, not less, important.

We are headed for a future where fewer workers will be needed, so schooling will go in a different direction, i.e., not so much vocational training.

Vocational courses will never have a majority of high school pupils so long as we have a highly complex technological society.

A "Bobbitt and Charters" approach to assessment failed in the 1920's. We do not know "specific skills needed for vocational proficiency" in rapid technological change in the 1970's.

Period of general education will be lengthened with vocational education specifics later.

How specific are the skills you have in mind? Technology changes task demands rapidly. Prediction of job success from assessment of person attributes is difficult. Work sample approaches tend to be a little better, but is that what is envisioned as "specific skills for vocational proficiency"? Because the proficiency criteria as often reside "out there"--not in the person alone. Proficiency hard to assess.

Specific vocational skills will be increasingly less in demand as social values, economy, and technology continue to change.

Event 5 (continued)

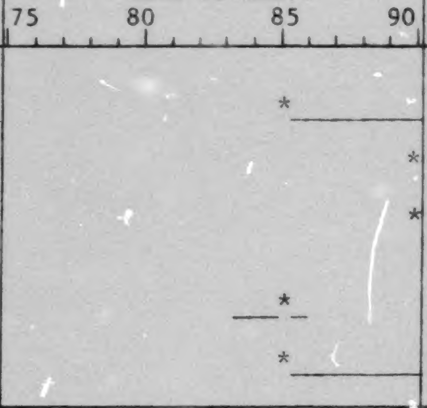
Believe pressure to get more specific will continue in next few years to force this by 1980.

Vocationalism will remain a recurring fad.

Event 12

Curriculum and Educational Programming Changes

Educational programming is now based upon the training of intellect rather than on specific curriculum content; therefore, pupil appraisal focuses upon the measurement of specific intellectual abilities.



Professional Groups	Date Estimate[a]	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=52)	*	19	44	-.42
Medical/Technical (N=3)	*	0	33	-3.00
Practitioners (N=13)	*	15	38	.08
Academic/Trainers/ Theoreticians (N=31)	*	19	55	-.94
Law/Legislative (N=5)	*	40	0	3.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 12

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

The "training of intellect" in the classical psychological jargon has not been a successful venture. Current practices lean toward specific curricula. The three parts to the event do not hang together well and there is room for some misunderstanding.

The efforts to improve intellect will be only moderately successful; the emphasis on vocational training and on curriculum will continue to grow.

Trends obviously away from such procedures.

Given the current "Zeitgeist" this seems incredible, and I hope we can avoid it.

This may occur by 1990, but feel with competing appraisal models, odds are less than 60% that this will occur prior to then.

Cognitive training, and hence, evaluation, will be reduced to their proper minimal role.

Hopefully a broader conception of "abilities" is moving us away from a unique focus on "training of the intellect."

Over time there will be a decrease in IQ testing.

Research is on the way, but won't be ready for more than 10 years.

Inadequate knowledge and technology.

I don't agree with the premise, nor do I believe others will hold such a view.

A move toward traditional education in hard economic times will force this sooner.

Technical aspects of appraisal will be difficult to devise to acceptable accuracy.

The research base needed is not forthcoming, at least not by 1990. In fact, we are entering a period of specific curricular concern in education. I can't see it ever happening.

Event 12 (continued)

We won't try to train the "intellect" (i.e., IQ), in that we've found it can't be significantly improved. We will continue to devote our energies to achievement.

I personally believe that intellect cannot be "trained" significantly.

"Training of intellect" as we now understand it is unlikely in foreseeable future as a supplanter of specific content.

With certain cognitive and differential ability dimensions we have the capability of doing this right now.

Cognitive training will be in disfavor for a number of years.

Trying to establish, measure, and train "specific mental abilities" is chasing rainbows. The trend to assess instructional need relative to desired competence (in life tasks) will continue to be the dominant direction, I predict.

The trend will occur, but later than 1990. It first requires a complex theory amalgamation between cognitive and social learning positions.

That the mind can be strengthened through "mental exercise" is a classic notion long discredited in temporary psychology.

The item misses the fact that all training, now and future, is specific, not general. The intent might be general; the training is not.

The affective and psychometric domains will be important parts of the curriculum.

The IQ does not tell a child's strengths and weaknesses in skills needed for academics nor activities of daily living.

I do not think we will ever separate our primary programming goals from curriculum content.

Requires too much system change to occur in time frame indicated.

Event 13

Curriculum and Educational Programming Changes

Due to an increased emphasis on humanistic education, pupil appraisal includes an assessment of morals, values, and ethics.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	 N	Facilitation-Inhibition Rating[b]
Total (N=53)	___*_____	13	32	-.64
Medical/Technical (N=3)	*	0	33	-3.00
Practitioners (N=13)	_________*_	15	23	-.69
Academic/Trainers/ Theoreticians (N=32)	_______*	13	31	.13
Law/Legislative (N=5)	*	20	60	-4.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 13

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

The prevailing humanistic movement would not tolerate assessment of morals, etc., especially if such appraisal were related to altering an individual's morals, values, etc.

Too controversial to achieve 60% probability in even 15 years.

"You can't legislate morality," and pupil appraisal is controlled largely by legislation.

One doesn't assess these, one allows for a process of becoming aware of them and their development.

This is in direct conflict with the cultural plurality notion.

There will be a curricular emphasis, but not an emphasis on pupil appraisal because it will be seen as an invasion of privacy to try to assess individuals in these areas. Also, there will be a de-emphasis on formal pupil appraisal.

Education will not enter this realm for many years.

There are too many different and individualistic morals, values, etc. to be assessed. Resistence from fundamentalists will be too great.

I don't believe we can, or will be able to, assess morals, values, and ethics.

We won't have the psychometric tests to do so.

Who is going to determine what is moral, valuable, or ethical?

There are no standards for morals, values, and ethics, and individuals are granted the freedom to formulate individual values.

Too tricky a topic for assessment in foreseeable future.

No agreement on precise behavioral definitions allowing measurement.

The present emphasis on privacy, right to develop own values, etc., will serve to deter assessment of values and ethics.

Morals, values, and ethics to be appraised call for absolute standard by which they are to be judged. Absolute standards unavailable.

I do not believe that such appraisal will be politically permitted.

This should forever be outside the scope of public education.

Increasing sensitivity to privacy issues will preclude formal appraisal of values, morals, and ethics, except as related to specific curriculum objectives in individual instances.

Such assessment will come under libertarian attack and be slowed, if not halted.

Unlawful.

Event 14

Curriculum and Educational Programming Changes

Since public schools are now responsible for providing all human services (medical, educational, nutritional, psychological, etc.), all appraisal processes are centralized within the educational institution.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	*———— (85 to 90)	15	49	-.53
Medical/Technical (N=3)	* (90)	0	33	-1.33
Practitioners (N=13)	*———— (85 to 90)	23	30	.46
Academic/Trainers/ Theoreticians (N=32)	*———— (85 to 90)	16	59	-.72
Law/Legislative (N=5)	* (90)	0	40	-1.40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 14

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Too much competition from extraschool-vested interest groups. The schools' reputations among other professions is not good enough to convince them to "give up" their current practices.

The complexity of the present system cannot be centralized without damage to the delivery effort. If this is recognized we will retain multiple agencies delivering services.

Perhaps possible, but at an incredible financial burden.

Other service delivery systems will grow in importance in later years. Schools will only be a part of "coordinated" appraisal system.

We are moving in this direction rapidly. I intend the answer to be for exceptional children.

Services will always be separate.

Other agencies will be gearing up to handle needed assessment and consultation processes.

Education will never assume all these functions in current society.

Cost prohibits complete delivery of services.

Schools will never be able to be responsible for all services. Not central to education.

This socialistic trend may materialize decades ahead, not shortly.

Centralization is bound to occur someday, but not for 25-50 years maybe. Why not schools as a logical place for human services?

I don't believe all medical appraisal processes should be in the schools. Financially the equipment is burdensome.

Medical professions will lobby against its role being taken over by schools.

Unlikely, since other community agencies (clinic, neighborhood centers, etc.) already are ahead of schools in doing this in many places.

Event 14 (continued)

Human services will not be centralized within the educational institution; rather, the educational services will be subsumed under the larger constellation of human services (of which education is only one).

Fifteen years is too short for these changes to take place, given history of public response to "social programs."

Too much resistance to such centralization. Also, no precedent for anything quite so sweeping in a school focus.

If by "appraisal *processes* will be (i.e., are) centralized within the educational institution" you mean that the service will be rendered in a school building as a matter of convenience and outreach to consumers, I'll make my response 1990, but I don't believe educational systems will be made responsible for providing *all* human services or will be primary agents in performance of medical exams and services.

I see the role of the school as becoming narrower and more specific. Unlikely this will shift.

Too costly. We need preventive measures.

Public schools are not seen as adequate as they are, much less to have the additional responsibilities of medical, etc., assigned to them.

Would require too many institutions giving up the power they now have.

This would be an imprudent overbroadening of public school authority.

Event 15

Curriculum and Educational Programming Changes

Due to financial constraints on school systems, implementation difficulties, and inadequate efficacy data, "mainstreaming" (integration of mildly handicapped students into regular education) as an educational alternative is rarely utilized.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	______*	0	64	-2.92
Medical/Technical (N=3)	*_____	0	0	-2.00
Practitioners (N=13)	*	0	92	-3.08
Academic/Trainers/ Theoreticians (N=32)	______*	0	53	-2.72
Law/Legislative (N=5)		0	100	-4.40

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 15

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Integration of the mildly handicapped will grow as general education expands its individualized learning capability. I see mainstreaming leveling off, but not returning to "rarely utilized" status.

Continuous use of the mainstream concept is necessary to provide the "least restrictive environment," which may be less expensive than more restrictive handling.

Mainstreaming will occur by 1990. Cost is not an inhibiting factor.

Civil rights and equal opportunity movements are here to stay and support mainstreaming.

Mainstreaming is here and will remain for better or worse.

Mainstreaming has existed as a viable alternative for at least 75 years and will continue to exist as an alternative as far as I can foresee into the future.

Lack of efficacy data and money will have the effort of keeping children in the mainstream under the "least restrictive alternative doctrine."

Mainstreaming will increase new methods of working with mildly handicapped.

Data is beginning to accumulate on this issue and "financial constraints" are in favor of mainstreaming.

Mainstreaming is not a new concept. Has been successful in years past and will continue to be.

Human rights considerations will not allow it to happen.

There is no valid basis for excluding mildly handicapped.

I think it will always be an alternative just like self-contained classes, schools, etc.

Event 16

Curriculum and Educational Programming Changes

Continuous appraisal in 60% of all classrooms has allowed individualized instruction to become a reality.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	*_______	17	1	4.09
Medical/Technical (N=3)	*	0	0	3.67
Practitioners (N=13)	_*______	23	0	3.69
Academic/Trainers/ Theoreticians (N=32)	_*______	16	3	4.22
Law/Legislative (N=5)	*_______	20	0	4.60

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Real progress (not lip service) is too slow for this to occur by 1990.

Simply not likely given current skills of teachers and administrators--and universities.

We will not arrive at a time to make such individualized appraisal so soon.

Lack of continuous appraisal is not the only factor keeping individualized instruction from becoming a reality. If the statement merely implies that by a certain date 60% of all school children (i.e., classrooms) will be continuously appraised, I'll let this be my optimistic day and say this will be the case by 1990.

Individualized instruction will not occur when more than five children are assigned to one teacher.

"Individualized instruction" has been forever a byword, never implemented.

Analysis, Synthesis, and Interpretation of Events: Curriculum and Educational Programming Changes

Event 5

Event 5 deals with vocational courses which would enroll the majority of high school students, thus changing the nature of assessment to focus upon specific skills needed for vocational proficiency. More than one fourth of the panelists indicated the event to be unrealistic and stated that it would not occur. However, 70% of the participants said it will occur between 1982 and 1986. Since the composition of the 25% who estimated the event would not occur is spread over three of the four professional groups, it strengthens the forecast of the 70%. Two general rationales offered by the dissenting panelists focused upon higher education's maintaining its attractiveness and rapid technological changes which make specific skill assessment extremely difficult, if not impossible.

Events 12, 13, 14

Events 12, 13, and 14 all deal with curriculum change. Event 12 deals with training of the intellect rather than specific curriculum content; Event 13 deals with humanistic education related to morals, values, and ethics; and Event 14 deals with the public schools' extending their realm of responsibility from education to include all types of human services (medical, nutritional, psychological, etc.). All three events were rated as occurring between 1985 and 1990; however, a large percentage of panelists rate them as never occurring. All three events had a slight negative rating, indicating to decision makers that these events are viewed as undesirable curriculum changes.

With regard to Event 14 (all human services are provided through the public schools), nearly 50% of the panelists said it would never occur. However, over the past 20 to 30 years the services provided through public schools seem to have expanded tremendously. For example, 20 years ago most public schools did not offer a hot-lunch program, but today many schools offer breakfast. Ten years ago a director of special education could not expend public school money to obtain a needed medical evaluation. Maybe another way to interpret Event 14 results is to say the panelists indicated their dislike for broadening public school responsibility to deliver human services. Perhaps the panelists would prefer a variety of settings to centralization of human services delivery.

Event 15

Event 15 deals with educational programming models and suggests that, due to implementation difficulties and financial constraints, "mainstreaming" is rarely utilized. In general, the panelists estimated that this event would never occur. They view mainstreaming as a desirable occurrence;

thus, regardless of the constraints, it is going to happen. Schools should restructure in ways that will facilitate mainstreaming rather than resist the trend. The median date of occurrence for this event was 1985, which may be a conservative estimate as few panelists rate the event as never occurring. Schools should definitely prepare for mainstreaming (integration of mildly handicapped students into regular education).

Event 16

Event 16 deals with continuous appraisal in 60% of the classrooms, allowing individualization of instruction to become a reality. The median date of occurrence was 1985, with the third quartile range extending to 1990. The event was rated as highly desirable for decision makers to facilitate. The shift to a later date estimate from Round II to Round III may indicate that the panelists view the event as a difficult thing to achieve. Perhaps the "60% of all classrooms" may be the difficulty in this event, as is indicated by some of the panelists.

Area D

Assessment Technology

Event 7

Assessment Technology

With 90% of the public schools operating under a management by objectives system, pupil appraisal testing is criterion-referenced to the defined educational objectives.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	 N	Facilitation-Inhibition Rating[b]
Total (N=53)	________*	6	8	2.6
Medical/Technical (N=3)	*	33	0	4.33
Practitioners (N=13)	________*	0	0	3.15
Academic/Trainers/ Theoreticians (N=32)	________*	6	13	2.31
Law/Legislative (N=5)	*	0	0	2.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

I'm less optimistic about 90% of public schools operations via MBO system, as it insures accountability.

It is upon us in many states already.

I do not think that 90% of our schools will be operating under management by objectives until later than 1990 because of resistance to "systems" approach.

Resistance to management by objectives is very deep seated. I doubt if 90% will be giving even lip service to it, let alone practicing it.

Some of the most valuable learning in school is related to "incidental learning," and this will become more and more recognized, thus countering the trend to appraise all progress by testing and specifically criterion-referenced testing.

First 90% will never occur. Criterion referencing to specific objectives will take its place as another good idea which was never achieved because of resistance to objectives as a way to view all that takes place in schools. Too narrow, too complex.

Current popularity of cognitive construct theory calls for assessment of how pupil arrived at his performance, not simply what it is as referenced by criteria. "Management by objectives" will supersede interpretation, but it will be slow through 1980's.

Management systems will die. See The Reading Teacher, May, 1975.

Event 3

Assessment Technology

Affective variables are now known to contribute 80% of the total motivation for individual pupil learning; therefore, pupil assessment measures the components of the affective domain.

Professional Groups	Date Estimate[a]	Percent of		Facilitation-Inhibition Rating[b]
	75 80 85 90	L	N	
Total (N=51)	_*	9	18	1.92
Medical/Technical (N=3)	*_	0	0	1.33
Practitioners (N=13)	* ________	15	15	1.77
Academic/Trainers/ Theoreticians (N=31)	_*	6	19	2.23
Law/Legislative (N=4)	*_	0	25	.50

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 3

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

I have severe doubts that the affective domain will represent that much of the variance in pupil learning--but if it does, it will not be evident by 1990.

Open records law will prevent most assessment procedures of this nature.

Pupil assessment will continue to emphasize cognitive over affective domain in 1990.

Believe we will continue to assess specific skills in terms of learning abilities and disabilities through at least early 1980's. Therefore, won't devote all attention to affective domain.

State law requires comprehensive assessment of special ed. students, and comprehensive includes these variables. This may have an impact on the rest of the school's assessment procedures.

This statement is in conflict with established fact.

Such assessment measures are extremely suspect and will remain so.

We will not have good psychometric measures in this area.

Here I am referring to psychophysiological rather than traditional testing of affective domain. I'm in this area of research, and I think it will take until 1990 to develop sound approaches.

Technology will not be adequate to assess affective performance until 1990.

Will not be agreement of precise measurements of affective domain.

I doubt if affective variables contribute 80% of motivation for learning. Assessment of affective too complex.

A research base for meaningful assessment in this area will not be established until the late 1980's.

Reconcilable "components of affective domain" to comment distrust of adjustment/personality measures will take time given current media-supported bias against such measures.

I don't believe the first part of the statement affects accurately any state in the real world and even if it does, education will not use language precisely enough for the "therefore" to ever follow.

I do not see schools ever getting away from 3R's and into affective measurement.

Event 4

Assessment Technology

It is now recognized that language acquisition is a significant variable in pupil learning; therefore, pupil assessment always includes a psycholinguistic appraisal of pupil functioning (i.e., syntax, morphology, phonology).

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	____*__	6	6	2.92
Medical/Technical (N=3)	*	0	0	4.33
Practitioners (N=13)	*_______	0	0	2.92
Academic/Trainers/ Theoreticians (N=32)	*_____	9	9	2.78
Law/Legislative (N=5)	_*_____	0	0	3.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 4

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

It will take longer than that for all the professionals to speak the same language.

The emphasis on this will continue to grow. There will be a major response to bilingual concerns and litigation.

We are not sophisticated enough at this stage to be ready to do this by 1990.

Insufficient personnel will be available or hired to process this evaluation. Taxpayers will not support complex support personnel.

Although psycholinguistics have made rapid strides, the assessment methodology and massive inservice necessary will not be operative in a widespread fashion until 1990.

I believe a detailed psycholinguistic appraisal will be undertaken only when child performance indicates there may be a problem. If, however, the psycholinguistics appraisal referred to means simply a kind of screening assessment such as all regular teachers might carry out (such as a reading readiness testing), I would move my data to the low interquartile range (say 1980).

I think always is too absolute a term here. Such psycholinguistic appraisal will become frequent by 1982, but not always used. In many cases not necessary.

The urge toward recognition of bilingual children's needs will slow with a depression.

Event 6

Assessment Technology

Health maintenance organizations are available to the majority of society; therefore, 70% of all children who will require special services in the schools are identified by the age of five years.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	 N	Facilitation-Inhibition Rating[b]
Total (N=52)	________*________	8	6	3.54
Medical/Technical (N=3)	*	0	0	4.67
Practitioners (N=13)	*________	8	8	2.77
Academic/Trainers/ Theoreticians (N=31)	________*________	10	6	3.71
Law/Legislative (N=5)	___*_____	0	0	3.80

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 6

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Most problems are learning, not medical, in nature.

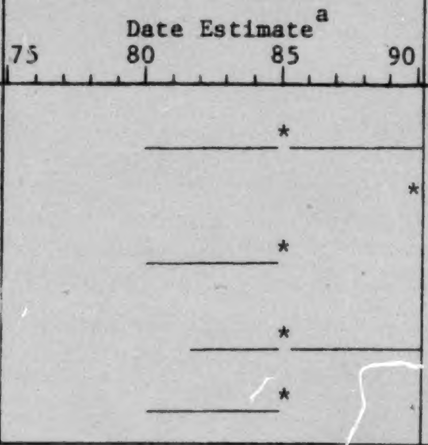
It is unlikely that 70% of all children can be identified through medical evaluation.

Not within 10 years, but later than 1990, most children will be evaluated by age 5, but perhaps not as comprehensively as necessary.

Event 7

Assessment Technology

Forty states now require preschool assessment of all children in a manner similar to laws requiring inoculation against communicable diseases.



Professional Groups	Date Estimate[a]	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)		2	7	2.72
Medical/Technical (N=3)		0	0	4.33
Practitioners (N=13)		0	0	2.31
Academic/Trainers/ Theoreticians (N=32)		3	6	3.00
Law/Legislative (N=5)		0	20	1.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 7

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

This will not wait until the 80's with current push for greater health services.

Until one can assess "situational" variables in any prediction formula, the exclusive assessment of child variables will prove fruitless.

We are more and more coming to the conclusion that preassessment does not predict future functioning for a significant number of children.

I believe that such mandatory assessment is unconstitutional.

Event 8

Assessment Technology

Accumulating evidence of the interaction of individual pupil characteristics, school, community, and home environments has produced a shift away from the medical model of individual pupil diagnosis and treatment to an appraisal model yielding a description and analysis of the individual's total environment.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	________*	9	9	3.32
Medical/Technical (N=3)	*	0	33	2.00
Practitioners (N=13)	________*	15	8	2.69
Academic/Trainers/ Theoreticians (N=32)	________*	9	6	3.63
Law/Legislative (N=5)	*________	0	20	3.80

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 8

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Don't believe schools can do this, nor will parents (adult environment) cooperate.

Too difficult to accomplish, hence delay.

While clearly needed, such procedures would require a massive, systematic movement, including personnel additions.

This is well under way already and will be a major response to litigation regarding IQ.

Medical model is tricky ("adaptable") and therefore subtly still around even when thought to be gone.

It will take many years to develop a usable description for this.

One cannot assess and ascertain the individual's total environment.

Your respondents have more faith in our ability to identify and measure those elements of the "total environment" than do I.

"Description and analysis of the individual's total environment" is perhaps too ambitious.

Legislation and litigation are now forcing multiple assessments, including adaptive or environmental. Assessment technology will boom in next two years.

Event 9

Assessment Technology

The influence of individualized instruction and the use of criterion-referenced tests have resulted in regular classroom teachers performing 80% of pupil appraisal.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	______*	8	8	2.64
Medical/Technical (N=3)	*	0	0	4.00
Practitioners (N=13)	___*	0	0	3.23
Academic/Trainers/ Theoreticians (N=32)	______*	0	13	2.38
Law/Legislative (N=5)	*	20	0	2.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 9

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Utilization of such procedures will require far more structure and training to insure both "setting up" and maintaining such assessment procedures.

Unless all teachers have a degree in assessment as well as pedagogy, this can't happen.

Current directions are not facilitating rapid changes in this direction.

I do not believe that either individualized instruction or criterion-referenced tests will be that effective.

Pupil appraisal will remain primarily in the hands of school psychologists and special education resource teachers.

Teachers currently do perform most of the assessment!

Counselor and school psychologists lobbies.

Virtually true now.

Pressure toward specialization in the area of pupil appraisal will intensify rather than being turned over to "regular classroom teachers."

Dewey spoke of individualized instruction with as much specificity as is now being presented. Everyone is for it, but nobody can really do it.

Unions and professional rivalry will prevent prompt implementation.

Event 17

Assessment Technology

Educational appraisal now includes the assessment of teacher traits and skills.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=53)	__*__	9	4	2.70
Medical/Technical (N=3)	*	0	33	1.00
Practitioners (N=13)	_____*___	30	0	1.85
Academic/Trainers/ Theoreticians (N=32)	*	3	3	3.31
Law/Legislative (N=5)	_____*____	0	0	2.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 17

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Teachers' unions will not permit it to occur after the teacher is on the payroll.

Because of lags in teacher-training programs and resistance by teacher unions.

This will continue to be an informal aspect of appraisal. We can't move heavily (or formally) into this until we know more about pupil appraisal.

Teacher resistance to personality analysis will postpone this till after 1990.

First we've got to identify the traits. That will definitely be later.

We only now are doing this in research, and the development of techniques to do this on a 60% probability of occurrence will take until 1990.

A long and difficult research task must be accomplished and teacher union opposition must be overcome before it can be effectively done.

Things just don't change that fast! Especially so when the teacher organizations are becoming more powerful and conservative!

Legal constraints will prevent most "trait" assessment because little evidence relates "traits" to teaching effectiveness.

Analysis, Synthesis, and Interpretation of Events
Assessment Technology

Event 2

Event 2 deals with criterion-referenced appraisal related to educational objectives. This Delphi indicates that 86% of the respondents thought the event would occur between 1980 and 1985. Apparently most of these experts feel very strongly that there is a good chance the event will occur within the next 10 years. Furthermore, their facilitation-inhibition rating is very high in favor of encouraging decision makers to facilitate the event. The implication for practitioners and decision makers is acceptance of the possibility the event will occur. They should begin to arrange decisions, policy, and practice in such a way to facilitate the transition toward criterion-referenced assessment related to educational objectives.

Event 3

Event 3 deals with assessments' being comprised of a greater measurement of the affective domain. Nearly three fourths of the panelists estimated this event would occur between 1983 to 1985, which is a very narrow range. Of significance though, is that 18% said it would never occur. Most of the panelists view the occurrence of this event as positive and one whose occurrence should be facilitated by decision makers. If the event is to occur, it means that more research and development monies and time need to be expended in devising the technical methods for assessing components of the affective domain.

Event 4

Event 4 centers upon the recognition that language acquisition is a significant variable in pupil learning to the degree that pupil assessment always includes a psycholinguistic appraisal of pupil functioning (i.e., syntax, morphology, phonology). An estimation by 86% of the panelists that the event could be expected to occur between 1980 and 1985, with a very high facilitation rating for decision makers, seems to express another critical area for increased research and development activities. Currently such assessment appears to exist only in such places as speech and hearing clinics, with little wide-spread application. Most areas of pupil assessment to this point have been basically intellectual and related to academic achievement; perhaps the panel majority feels a need to focus upon assessment of skills prerequisite to academic achievement.

There is a conceptual conflict between Event 2, which deals with criterion-referenced assessment, and Event 4, which deals with psycholinguistic appraisal. Both events are rated to occur within the same time frame--1980 to 1985--and both are highly rated in terms of facilitation by decision makers. The problem to resolve appears to be the remedial vs.

compensatory approach to educational problems. Chances are that criterion-referenced appraisal will occur first because it will be easier to devise successful assessment procedures related to criterion-referenced appraisal than to a psycholinguistic assessment, which would be more complex and abstract. By not taking into account psycholinguistic assessment, a major area of importance could be missed when evaluating handicapped students.

The complexity of the problem demands an interdisciplinary research and development effort, but territorial behavior between disciplines may preclude such an effort unless the research monies are dispensed in ways that would require interdisciplinary efforts.

Events 6 and 7

Events 6 and 7 both deal with preschool assessment which is similar to inoculation efforts, where massive screening and evaluation take place. Both events seem to imply a high societal value on the importance of pupil appraisal for educational, as well as medical, reasons. The panel time estimates were very consistent, with a median estimate for both events of 1985. Since 86% of the panel estimates for Event 6 and 91% for Event 7 were within the 1980 to 1990 range, it appears those kinds of preschool assessment services might be available and will be required. Both events were also positively rated for facilitation by decision makers.

Event 8

Event 8 deals with a change in appraisal models from remedial models to models that emphasize an analysis of the individual operating within his total environmental system. The panelists viewed this event as occurring within a similar time range as Events 6 and 7, with a median estimate of 1985. This event received a very high rating for facilitation by decision makers, indicating that the panelists feel the event to be extremely desirable. With the time estimates offered for Events 6, 7, and 8, 1985 might be somewhat of a watershed point for total assessment services being available to most individuals, covering most assessment areas.

Event 9

Event 9 concerns a new role in pupil appraisal, where the regular classroom teacher provides 80% of the pupil appraisals through criterion-referenced tests. Event 9 is also related to Event 2 (criterion-referenced testing used by 90% of the public schools to define educational objectives). The panelists are in high agreement both on their time estimates for occurrence and degree of facilitation by decision makers for both events. The median time estimate was 1985 for both events. One way to interpret these event estimates would be that the panelists agree that criterion-referenced tests will be accepted as a vehicle to define educational objectives by 1985, and that they will account for most of the assessment related to educational programming. Furthermore, the traditional clinical type of assessment procedure may be vulnerable within the next 10 years.

In considering Event 8 with Events 9 and 2, the majority of educationally related assessments are done by the teacher, but students in need of extensive assessment receive total environmental assessment performed by an assessment specialist who can synthesize data from a wide range of areas. Furthermore, the breadth of individual assessment data collected in the future may include affective and language acquisition variables (Events 3 and 4 requiring a higher degree of assessment technology).

Event 17

Event 17 relates to the inclusion of teacher traits and skills as areas of appraisal. The median date of occurrence for this event was 1985, and it received a highly desired rating as an event decision makers should facilitate. Very few participants estimated that the event would never occur. Thus, within the next 10 years teacher traits and skills possibly will become a routine part of an educational assessment. Since the procedures and instrumentation to perform such an assessment are not currently available, a very specific research and development effort will be necessary to facilitate the occurrence of this event. Since 96% of the participants estimate that the event is going to happen, there may be much pressure to bring it to fruition.

Area E

University Training

Event 35

University Training

Nationwide competency-based criteria are utilized in the training of appraisal personnel.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	 N	Facilitation-Inhibition Rating[b]
Total (N=53)	*————	8	11	2.43
Medical/Technical (N=3)	*————	0	0	3.33
Practitioners (N=13)	*————	0	15	1.38
Academic/Trainers/ Theoreticians (N=32)	——*————	13	9	2.88
Law/Legislative (N=5)	*	0	20	1.80

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 35

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

This is well on its way to be developed now and should exist by 1980.

California has now passed the Ryan Act which does require this.

In 15 years I feel this may develop.

"Nationwide" makes me go with L. I took this to imply "uniform." I see it happening sooner state-by-state.

Competency "era" has peaked and will decline.

I do not believe "nationwide" criteria are acceptable. More pluralistic procedures will dominate the scene.

We have a long way to go yet in learning how to carry out effective competency-based training. There is a lot of rhetoric about this, but there are many mountains to climb before agreement is reached on national criteria and how to accomplish the end described.

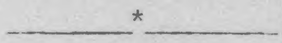
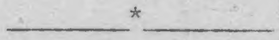
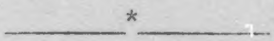
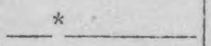
Will be many individual state differences.

The resistance to competency and its undefinedness will persist.

Event 36

University Training

Due to increased utilization of automated assessment instruments and procedures, public schools have a need for persons trained as integrative specialists (skilled in analysis, synthesis, organizational dynamics, etc.).

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=52)		21	6	2.37
Medical/Technical (N=3)		0	0	2.67
Practitioners (N=13)		31	8	2.38
Academic/Trainers/ Theoreticians (N=31)		23	6	2.52
Law/Legislative (N=5		0	0	1.20

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 36

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Require two more generations to bridge the communications gap.

Don't believe cheap technology and public acceptance will both be present by 1990. Until both occur, will need test administrators (not just synthesizers).

Do not agree that "automated assessment" will be widespread before year 2000.

Too speculative. I just don't see it. As things get complicated we all become "integrators."

I guess I again don't understand the thrust of the statement. The need for persons trained as integrative specialists already exists. Increased utilization of "automated instruments and procedures" will only make the already-present need more pronounced.

Automated assessment unlikely till later; therefore, appraisal specialist will be needed for foreseeable future.

High cost can't be absorbed by school budgets.

I see few viable automated assessment instruments being developed.

Organizational specialists will not supersede the teacher in making such appraisals.

Both knowledge and resources are too limited to accomplish this in 15 years.

Event 37

University Training

All regular and special instructional personnel are trained in techniques for the instruction of exceptional children; therefore, there is a 60% reduction in demand for appraisal of mildly handicapped individuals.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=52)	____*____	10	6	3.31
Medical/Technical (N=3)	*	0	0	4.33
Practitioners (N=12)	____*____	8	8	3.92
Academic/Trainers/ Theoreticians (N=32)	__________*	13	3	2.91
Law/Legislative (N=5)	*	0	20	3.80

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 37

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

I believe that full training for special education would require a dual certificate in general education. I don't foresee this.

No, teacher turnover will not leave so many able people to handle so many problems of children.

They may take courses, but they won't be sufficiently skilled. Some will have only limited interest.

More knowledge increases rather than decreases need for appraisal. Note complexity of diagnostic techniques among medical specialists.

Instructional personnel will not have specific training for exceptional children.

It will be later than 1990 before all teachers trained in teaching exceptional children.

The reasons for referrals are, importantly, organizational, not technical.

Event 38

University Training

A significant proportion of time in 60% of the training programs for appraisal specialists is devoted to the development of skills in producing accountability information associated with school programs.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=52)	________*	6	10	1.25
Medical/Technical (N=3)	*	0	0	-1.67
Practitioners (N=12)	*________	8	17	.50
Academic/Trainers/ Theoreticians (N=32)	________*	6	9	1.69
Law/Legislative (N=5)	_____*____	0	0	2.00

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 38

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

We are there now!

Believe there will be increasing differentiation of roles between appraisal and research personnel in next 15 years.

Due to accountability legislation this will occur, although I believe it will change back by 1985.

Not a high priority in conservative institutions.

More emphasis on diasnosis than accountability.

Accountability push will continue, and this event will be affected.

Event 39

University Training

A greater number of professional disciplines and specialties (law, medicine, sociology, curriculum and instruction, special education, etc.) are involved in the certification of pupil appraisal personnel than in the year 1975.

Professional Groups	Date Estimate[a] 75 80 85 90	Percent of L	Percent of N	Facilitation-Inhibition Rating[b]
Total (N=52)	———— * ————	4	15	1.06
Medical/Technical (N=3)	*	0	33	2.00
Practitioners (N=12)	*	0	17	1.25
Academic/Trainers/ Theoreticians (N=32)	———— * ————	6	13	.94
Law/Legislative (N=5)	———————— *	0	20	.80

[a] Solid line=interquartile range; * = median date estimate.

[b] +1 to +5 = to facilitate the event occurrence, -1 to -5 to inhibit the event occurrence.

Event 39

Participant Rationale for Leaving Date Estimate Outside the Interquartile Range

Education rarely, if ever, requests assistance in the appraisal of its personnel.

Need only increase by one for statement to be true, and given current state of litigation, I believe it will occur by 1978.

Current practice seldom involves dialogue, which must precede debate and planning. Too, the disciplines need to control their own professional behavior, would require positive "working together" experiences prior to joint action.

Such appraisals, at root, are made through judgments by teachers, not through pupil appraisal personnel.

The strangle hold of the educational bureaucracy will not be released as to wielding certification power (training, yes). Certification power is vested and will remain.

Education will not become a specific concern of law, medicine, etc.

Unions are already bringing this about.

Probably somewhat greater than 1975 in another 10-15 years, but hardly a noteworthy or radical change.

Historic trend has indicated that people within a professional discipline can best judge the quality within their discipline and can by choice get consultation and training from other disciplines.

New specialists throughout U.S. are gaining certification (e.g., guidance associates).

Too costly a process.

I believe it is already happening.

Event 35

Event 35 deals with nationwide competency-based criteria for training appraisal personnel. Viewed as a desirable event to occur, the panelists estimate the event occurrence between 1985 to 1990, with a median date estimate of 1985. Only 11% of the panelists rated this event as not occurring. These results imply that nationwide competency-based criteria for training appraisal personnel will be available within the next 10 to 15 years.

Event 36

Event 36 deals with the use of automated assessment instruments which result in the need for personnel trained as integrative specialists (skilled in analysis, synthesis, organizational dynamics, etc.). The median date estimate for the occurrence of this event was 1985. However, the interquartile range was spread over 10 years, which is viewed as a fairly wide range. A possible cause for such a spread in date estimates might be the two elements of the event statement. The first element cited the use of automated assessment instruments and procedures, of which the panelists are not in favor. The second element, training appraisal personnel as integrative specialists, may be viewed very favorably by our group, resulting in earlier date estimates. Thus, the existence of both elements in the event may have caused the wide range of date estimates.

Event 37

Event 37 deals with training all regular and special instructional personnel in techniques for instruction of exceptional children, which would result in a 60% reduction in demand for appraisal of mildly handicapped. The panelists' median date estimate for occurrence of this event was 1987, and the event was viewed as very desirable for facilitation by decision makers.

Event 9 (the influence of individualized instruction and the use of criterion-referenced tests resulting in regular classroom teachers performing 80% of pupil appraisal) has implications for Event 37. One aspect of future teacher training might be the use of criterion-referenced tests as part of a more serious movement toward individualized instruction. At a minimum, training that facilitates the mainstreaming of the mildly handicapped could be a part of all teacher training. Criterion-referenced tests may facilitate mainstreaming by providing both regular and special teachers easily accessible information about an individual's educational strengths and weaknesses.

Event 38

Event 38 deals with training appraisal personnel to have skills in producing accountability information associated with school programs. The median date estimate for this event was 1985, and 84% of the participants estimated the event would occur. The event was also seen positively. Gathering accountability information may, in part, be the responsibility of appraisal personnel, and as a result they could be viewed negatively by a school system. If they were viewed negatively due to this aspect of their job, training of appraisal personnel should consist of developing tolerance for working in relative isolation without a great deal of peer support. Litigation and legislation have played a role in developing the need for public school accountability; therefore, the training of appraisal personnel should also include the legal aspects associated with education and appraisal. Furthermore, in order to be able to successfully configure and distribute accountability information appropriately and accurately, appraisal personnel need to be skilled relative to organizational theory and problems.

Event 39

Event 39 deals with an increased number of professional disciplines (law, medicine, sociology, special education, etc.) involved in certification of pupil appraisal personnel. The median date estimate for occurrence of this event was 1985, but there was a rather large interquartile range, 1980 to 1990. Participants changed very little in their date estimates from Round I, which might imply some confusion or lack of event clarity or an event with strong but diverse opinions. Perhaps the disciplines represented want to maintain their "territorial" prerogative.

Event 39 appears related to Event 3, assessment of affective variables; Event 4, assessment of language skills; Event 8, assessment of multiple variables in a student's total environment; and Event 36, the use of automated assessment instruments and appraisal personnel being trained as integrative specialists. These events seem to imply an expanded, technical sophistication of pupil appraisal instruments and procedures, along with the training of individuals to integrate appraisal data from a myriad of sources. This might involve a greater variety of professional disciplines in the training and certification of appraisal specialists. Events 3, 4, 8, and 36 were estimated to occur within the interquartile range of Event 39 (1980 to 1990), but at various points within this range. This may account for some of the date estimate spread in Event 39, implying difficulty in gaining closure and consensus on such a complex topic.

Implications for Pupil Appraisal

IMPLICATIONS FOR PUPIL APPRAISAL

In the mid-1960's an individual entering the field of pupil appraisal in the public schools might have been asked to perform a service unheard of and for which s/he had received no training. "Will you diagnose or identify a learning disability?" Individuals had to provide their own crash courses in this new mysterious entity. Legislators and university training programs were caught with the necessity of responding reactively to an educational program need that gained rapid momentum. In the late 1960's a cry for educational relevance in the diagnosis of exceptional children resulted in some states requiring all appraised students to receive an individual "educational plan." However, most training programs were not prepared for this change and discharged graduates faced with a major training need to become "relevant." How many times can a system recover from future shock without significantly changing its ability to be responsive to rapidly metamorphosing client needs? System survival may be determined by the amount of time that lapses between identification of client needs and system response to those needs. Indeed, if the system ignores client needs, other contingencies are sought to relieve client frustration (i.e., litigation, new legislation, reallocation of funds, etc.). Decision makers within systems are faced with a problem of gathering data sensitive to future trends and events. Businesses have been aware of this problem for years, but education has only recently begun to consider the possibility of systematically anticipating future events other than the identification of revenues and construction of new buildings. The ability to anticipate future trends or even getting into an anticipation frame of reference seems directly related to the degree of system responsiveness to client needs.

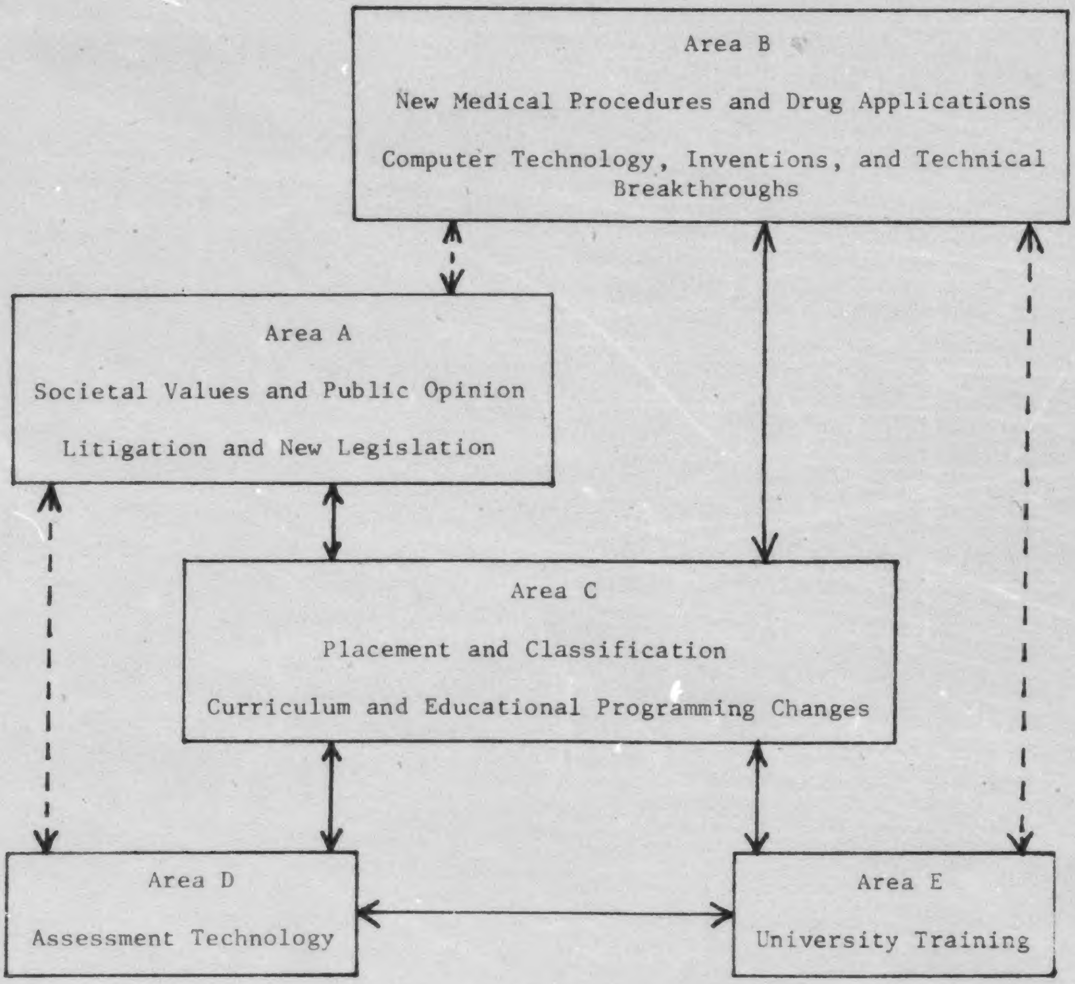
Evidence for anticipating future educational trends can be found in the Schipper and Kenowitz study (1975). Participants for the development and rating of events were administrators from across the United States such as chief state school officers, state directors of special education, state education agency staff in special education units, large city special education directors, and national/regional special education administrators. The generation and actual rating of events took place in 1973-74. One event in particular ("The Federal share of funding programs for handicapped children increases from 1% to 25%") may occur before the predicted median year of 1990 made by this group. The following information on federal legislation (pending presidential signature) and subsequent appropriations was found in the Education Daily, Vol. 8, No. 225, November 20, 1975, in reference to Senate Bill 6:

> Usually in that it's permanent legislation, the handicapped bill (5.6) is authorized at $100 million for 1976 and $200 million for FY 1977 with the Federal Government committed to pay a gradually increasing percentage of the national average per-pupil expenditure, times the number of handicapped children getting special education, each year thereafter. That money is supposed to be used only for the 'excess costs' of educating handicapped children, after states and LEA's have spent as much on handicapped as on

non-handicapped children, with the Federal share of the total cost of handicapped education reaching 20 percent by the year 1982.

The following section is an attempt by the authors to integrate into meaningful forecasts the data from this study, the Schipper and Kenowitz (1975) study, and the Yates (1972) study. In addition, three graduate student scenarios on future trends in university training were prepared from the results of the current study and from the Yates (1972) study and are provided in Appendix D. At this point a caution from Schipper and Kenowitz (1975) must be presented to the reader: "Since the Delphi is a consensus judgment, it should not be reviewed as producing complete, precise descriptions of the future" (p. 4).

Interaction between the eight areas or topics under which event statements were categorized may be represented as follows:


Area B
New Medical Procedures and Drug Applications
Computer Technology, Inventions, and Technical Breakthroughs
Area A
Societal Values and Public Opinion
Litigation and New Legislation
Area C
Placement and Classification
Curriculum and Educational Programming Changes
Area D
Assessment Technology
Area E
University Training

Interaction: An Example

The area of Societal Values and Public Opinion interacts with Litigation and New Legislation to influence the arena of Placement and Classification and Curriculum and Educational Programming. Further change in Area C is influenced by Area B, New Medical Procedures and Drug Applications and Advances in Computer Technology, Inventions, and Technical Breakthroughs. Areas C, D, and E influence change in each other. As an example, legislative action could create a new special education service area where virtually no assessment skills and techniques exist, thus creating research and development activities for such skills and techniques, which in turn alters the content and focus of a university training program. The dotted lines indicate interaction between the other areas, but it is not as strong as the interaction indicated by the solid lines.

Area A Societal Values and Public Opinion
Litigation and New Legislation

There may be an attempt within the next four years to reduce or eliminate pupil appraisal services as a function of depressed economic conditions, reduced numbers of school-age children, and zero-based state budgeting. Such an occurrence will be viewed very negatively with counter forces such as: (1) parental insistence for appraisal services, (2) accountability trends relying more and more on testing and other forms of assessment, and (3) special education funds being allocated on the basis of assessment and categorization.

Litigation centering upon the education and employment of the handicapped will continue for the next five to 10 years as a primary force to alter society's lack of responsiveness. The combination of litigation and new legislation is viewed with mixed feelings. One of the effects of the Open Records Law will be that by 1980 schools will offer training to parents in interpretation of school appraisal procedures and results. Individual assessment data will continue to be gathered, but the format of such data collection and maintenance may change in order to meet the intent of the law. Confusion and threat may be aroused when such events occur due to lack of understanding of the law's intent or improper interpretation. Some professionals interpret such events as possibly eliminating or drastically curtailing the maintenance of critical appraisal data, but lawyers and legislative personnel view such events as highly positive, leading toward improvement and support of pupil appraisal services. Change in the field of pupil appraisal (including more highly trained, sensitive appraisal personnel; more efficient pupil appraisal processes and procedures) will be facilitated through legal processes, litigation, and court action continuing into 1980.

By 1980 widespread efforts in locating unserved handicapped students will be under way in many states as mandated through legislation. Incidentally, a similar event was predicted by 1985 in the Schipper and Kenowitz (1975) study in that all states would conduct a census and maintain a register of names and handicapping conditions for all handicapped persons.

Area B New Medical Procedures and Drug Applications
Computer Technology, Inventions, and Technical Breakthroughs

Advances in medical procedures and drug applications that will significantly impact the field of pupil appraisal are predicted to occur in the 1990's and later. The use of drugs to improve behavior and learning may be in use by the late 1980's. Two similar events from Schipper & Kenowitz (1975) were predicted for the 1990's. Nonhabit-forming drugs which accelerate learning and which are administered daily by school personnel to 40% of the student population were predicted for the year 2000 in the Yates (1972) study. Advances in medical technology in the 1990's will increase rather than decrease the number of severely handicapped students entering school.

By 1985 appraisal data will be maintained in state-operated computer banks in order to provide school districts, state agencies, and legislators with composite, discrete data for decision-making purposes. The use of computer technology in assessment procedures will continue to meet resistance from professionals, as will the use of computers, t.v., holography, etc., in instruction. Collection, storage, and retrieval of data from computers for administrative purposes will be much more acceptable than computer instruction of other interactive procedures. Nutritional appraisal of handicapped students will become a part of the standard appraisal techniques used in the late 1980's. According to Yates (1972), electronic and electro-mechanical devices will be developed by 1990, permitting two-way communication for an average of 70% of deaf, blind, and deaf/blind individuals.

Area C Placement and Classification
Curriculum and Educational Programming Changes

Extensive use of behavioral modification techniques in schools, homes, and communities will reduce by one third the institutionalization of the mentally retarded by 1990 (Yates, 1972). However, the concept and availability of service through a residential institution will continue to endure for an appreciably longer period of time than many people hypothesize regardless of the community service delivery model.

By 1985 mainstreaming (integration of mildly handicapped students into regular education) will be implemented in most states. The practice of individualized instruction and continuous classroom appraisal is viewed as highly desirable and by the late 1980's may be implemented by some states (Schipper & Kenowitz, 1975). Pupil appraisal of handicapped students at the secondary level will become more involved in assessing vocational skills such as task persistence and punctuality (work adjustment skills) rather than skills specific to a profession (carpentry, painting, metal work, etc.). Other secondary-level curriculum changes by 1985 involve the requirement of courses dealing with child-rearing practices and behavioral management techniques by the majority of all high schools (Yates, 1972).

Area D Assessment Technology

Advances in assessment technology during the mid-1980's will result in some significant changes in the nature and dimensions of pupil appraisal. Pupil assessment will include psycholinguistic appraisal of pupil functioning (i.e., syntax, morphology, phonology) when such an assessment is warranted. More classroom teachers will be trained to administer criterion-referenced tests as a function of the increase in efforts to provide individualized classroom instruction. The result of such classroom appraisal will be a decrease in referral of some mild learning problems but an increase in demand for more sophisticated appraisal of moderate and severe learning problems. Accumulating evidence of the interaction among individual pupil characteristics, school, community, and home environments will produce a shift away from the medical model of individual pupil diagnosis and treatment toward an appraisal model, yielding a description and analysis of the individual's total environment. A shift to the environmental model of individual pupil appraisal will be facilitated by technical breakthroughs in the ability to measure affective domain components and teacher traits and skills that interact with various pupil characteristics.

Area E University Training

In the late 1980's university training for pupil appraisal personnel and instructional personnel who work with the handicapped will shift somewhat in emphasis. For instance, a significant proportion of time will be spent in training appraisal specialists to develop skills in producing accountability information associated with school programs. Furthermore, nationwide competency-based criteria will be utilized in training appraisal personnel. The advent of mainstreaming (integration of mildly handicapped students into regular education) nationwide will cause the majority of all educational preparatory programs to require six credit hours of course work with the exceptional child (Yates, 1972). Professional educational personnel who work with the handicapped will receive training which integrates knowledge, skills, techniques, and environments which were formerly within the realms of medicine, social work, or pharmacy, exclusively (Yates, 1972). Finally, by 1990 entrance to university training programs will be regulated in 30 states by data obtained in studies of five-year supply and demand requirements for professional personnel (Yates, 1972).

References

Schipper, W. V., & Kenowitz, L. A. Special education futures: A forecast of events affecting the education of exceptional children: 1975-2000. Washington, D.C.: National Association of State Directors of Special Education, 1975.

Yates, J. R. The general special education administration consortium Delphi probe. Columbus, Ohio: University Council for Educational Administration, 1972.

Appendix A

Introductory Letter and Round I Questionnaire

211 east seventh street austin texas 78701 512/476-6861
texas
regional
resource
center

The Texas Regional Resource Center (TRRC) is one of 13 Resource Centers established across the United States for the enhancement of appraisal services of handicapped children. Appraisal of handicapped children refers to a continuum of events from referral, screening, and comprehensive evaluation (testing) to educational planning based on the test results and placement in the most appropriate educational program (regular or special education). A review of the literature and identification of current models of appraisal are being completed. One specific area of interest for the TRRC is forecasting future events in appraisal that will serve as a needs assessment for current planning in appraisal model development.

You have been identified as having expertise in one or more areas judged to be potentially impactful upon appraisal of handicapped individuals. We invite your participation in a Delphi study concerned with identifying future events that are likely to influence pupil appraisal. The specific demands which would be made upon you would be the completion of approximately three questionnaires. Each questionnaire would take no more than 30-40 minutes to complete and will deal with such areas as appraisal techniques and processes, medical advances, educational advances, societal values, and legislative changes.

In order to provide some compensation for your involvement in the study, we would be able to provide a $30.00 honorarium at the conclusion of the study. Additionally, through the study we would be providing an opportunity for you to obtain information relative to the perceptions of your colleagues regarding the specific area of your concern. You will also be provided a summary report at the conclusion of the study.

Your input into the formulation of the Delphi events is extremely important. Therefore, please list 10 events that you conjecture might take place during the next 14 to 20 years that you consider to have potential impact upon the appraisal and educational programming of handicapped individuals.

Enclosed is a self-addressed, stamped envelope for the return of your Round I Response Form.

Sincerely,

Henry Morrow

Henry Morrow, Ed.D.
Project Coordinator

HM/bb

Enclosures

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DELPHI APPRAISAL

Round I Questionnaire

In the space provided, list up to 10 events you conjecture might take place during the next 10 to 20 years and that you perceive as having possible impact upon the appraisal and educational programming of handicapped individuals. In your conjectures, think about things that might affect:

University Training Programs
Manpower Needs
Medical Treatment
Instructional Methods
Admission/Exclusion Procedures
Technical Advances
Assessment Instruments

Events might be:

New Drugs or Drug Applications
New Medical Procedures
Inventions
Major Shifts in Societal Values
New Legislation
New Policy Decisions
Unanticipated Occurrences
Major Shifts in Public Opinion or Attitudes
Significant High Court Rulings
Technical Breakthroughs
Significant Shifts in the Organization and Delivery of Education

For example:

Event 1. New electronic techniques allow central nervous system functions to be translated into descriptions of the individual's learning potential.

Event 2. New clinical techniques allow culture-free appraisal of preschool children.

Do not feel constrained to place dates on the events you foresee, nor to list them sequentially or dependently. Simply list events you conjecture as being plausible during the next 10-20 years.

Name ________________________
(please print)

Delphi Appraisal--Round I Response Form

Event 1: ________________________

Event 2: ________________________

Event 3: ________________________

Event 4: ________________________

Event 5: ________________________

Event 6: ________________________

Event 7: ________________________

Event 8: ________________________

Event 9: ________________________

Event 10: ________________________

Appendix B

Introductory Letter and 46-Item Event Questionnaire

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texas
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resource
center

Enclosed is Round II of the Texas Regional Resource Center's Delphi Appraisal. The events listed in Round II represent a synthesis of events you and your colleagues provided in Round I. As you may know, the Delphi technique requires the grouping of individual responses. Thus, your individual responses will only be reported as group data resulting in participant anonymity.

The enclosed Delphi questionnaire is designed to allow you to compare your responses with those of the other panelists. Therefore, retain the top copy and return the other copy in the enclosed envelope. You will need your copy of Round II to compare and respond to Round III later. Please file it in an accessible place to facilitate your responses on the next round.

We hope you will find the events both interesting and stimulating. We look forward to receiving your responses. Please mail Round II by April 23, 1975.

Sincerely,

Henry Morrow

Henry Morrow, Ed.D.
Project Coordinator

HM/bb

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DELPHI APPRAISAL ROUND II

DIRECTIONS

1. In the box to the immediate right of each event, write down the projected date (1975 – 1990, L*, N*) for the occurrence of each event, given a 60% level of probability of occurrence.

   EXAMPLE:

1. New electronic techniques allow central nervous system functions to be translated into descriptions of the individual's learning potential.	1985

   *If you project the event will occur Later than the year 1990, write in "L". If you project the event will Never occur, write in "N".

2. Assign a rating as to whether the occurrence of the event should be facilitated or inhibited by decision makers.

   EXAMPLE:

The occurrence of this event should be highly facilitated by decision makers.	Neither facilitated Nor inhibited	The occurrence of this event should be highly inhibited by decision makers.

+5 +4 +3 +2 +1 0 –1 –2 –3 –4 –5

3. Ignore the you find on the pages.

4. When you have responded to all events, tear off the first copy and keep it. You will need it for Round III in order to compare your responses with those of the other panelists.

5. Place the second copy in the enclosed envelope and return it to TRRC.

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
1. Due to the Open Records Law of 1975, data gathered through pupil appraisal contains no individual personality, intellectual functioning, or family relations data.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
2. With 90% of the public schools operating under a management by objectives system, pupil appraisal testing is criterion-referenced to the defined educational objectives.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
3. Affective variables are now known to contribute 80% of the total motivation for individual pupil learning; therefore, pupil assessment measures the components of the affective domain.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
4. It is now recognized that language acquisition is a significant variable in pupil learning; therefore, pupil assessment always includes a psycholinguistic appraisal of pupil functioning (i.e. syntax, morphology, phonology).		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box bel[illegible] write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence.	In each box below, assign a value to each event by circling a numerical value.
5. Vocational courses now enroll the majority of high school students; therefore, assessment now focuses upon specific skills needed for vocational proficiency.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
6. Health maintenance organizations are available to the majority of society; therefore, 70% of all children who will require special services in the schools are identified by the age of five years.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
7. Forty states now require pre-school assessment of all children in a manner similar to laws requiring inoculation against communicable diseases.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
8. Accumulating evidence of the interaction of individual pupil characteristics, school, community, and home environments has produced a shift away from the medical model of individual pupil diagnosis and treatment to an appraisal model yielding a description and analysis of the individual's total environment.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
9. The influence of individualized instruction and the use of criterion-referenced tests has resulted in regular classroom teachers performing 80% of pupil appraisal.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
10. There is a shift from appraisal for admission to institutions to appraisal as a prerequisite for release from institutions.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
11. The last residential schools for the blind and the deaf are closed.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
12. Educational programming is now based upon the training of intellect rather than specific curriculum content; therefore, pupil appraisal focuses upon the measurement of specific intellectual abilities.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
13. Due to an increased emphasis on humanistic education, pupil appraisal includes an assessment of morals, values, and ethics.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
14. Since public schools are now responsible for providing all human services (medical, educational, nutritional, psychological, etc.) all appraisal processes are centralized within the educational institution.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
15. Due to financial constraints on school systems, implementation difficulties and inadequate efficacy data "mainstreaming" (integration of mildly handicapped students into regular education) as an educational alternative is rarely utilized.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
16. Continuous appraisal in 60% of all classrooms has allowed individualized instruction to become a reality.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
17. Educational appraisal now includes the assessment of teacher traits and skills.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
18. Computer managed educational programming now match teacher characteristics with student learning needs.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
19. Computers now complete 80% of pupil appraisal through interface with biofeedback instruments, resulting in the synthesis, analysis and profiling of appraisal data.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
20. The cost and time of pupil appraisal has been reduced 50% by simultaneously appraising large groups of students through the use of time share computers.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
21. Appraisal data is maintained in state operated computer banks thus providing school districts, state agencies, and legislators with composite, discrete data for decision making purposes.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
22. A variety of sophisticated prosthetic devices and computerized input-output devices now enable 80% of all physically handicapped children (motor, blind, deaf, etc.) to function adequately in regular education programs.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
23. With 80% of schooling now provided in the home through the use of sophisticated technology (cable t.v., computers, holography, etc.) continuous precise student appraisal is essential in the delivery of appropriate educational services.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
24. Psychophysiological hardware is available to monitor and modify attentional processes so that information will not be presented when a child is bored.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
25. Since the relation of nutrition to cognitive, motor, and emotional development is known, nutritional appraisal is emphasized in individual pupil appraisal.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
26. Individuals improperly classified through appraisal processes may now recover punitive damages from the responsible appraisal specialist.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
27. The extensive litigation, court rulings, etc. which occurred in the mid-seventies has resulted in complicated inefficient procedures for pupil appraisal in public schools.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
28. Court rulings censuring public schools for utilizing inadequately trained pupil appraisal personnel have resulted in public schools seeking higher trained appraisal specialists.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
29. Federal legislation has created a national agency to certify psychological tests in order to prevent the publication and use of tests not meeting rigorous validity and reliability standards.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
30. Legislation now requires mandatory reporting of handicapped children to public schools by other agencies and professionals.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
31. Involuntary sterilization is required of individuals with defective genetic structure.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
32. Advances in medical technology (improved pre- and post-natal care, genetic counseling, etc.) has significantly reduced the number of handicapped students entering school.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 50% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
33. With the common use of drugs to improve behavior and learning, appraisal processes are required to monitor medicated students.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
34. Effective medication controls 80% of the handicaps ordinarily present in children identified as "high risk" in infancy.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
35. Nationwide competence-based criteria are utilized in the training of appraisal personnel.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
36. Due to increased utilization of automated assessment instruments and procedures, public schools have a need for persons trained as integrative specialists (skilled in analysis, synthesis, organizational dynamics, etc.)		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
37. All regular and special instructional personnel are trained in techniques for the instruction of exceptional children; therefore, there is a 60% reduction in demand for appraisal of mildly handicapped individuals.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
38. A significant proportion of time in 60% of the training programs for appraisal specialists is devoted to the development of skills in producing accountability information associated with school programs.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
39. A greater number of professional disciplines and specialties (law, medicine, sociology, curriculum and instruction, special education, etc.) are involved in the certification of pupil appraisal personnel than in the year 1975.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
40. Factors such as reduced numbers of school age children, depressed economics, and zero based state budgeting have reduced financial resources to school systems therefore, school districts are forced to reduce and/or eliminate many special support programs such as pupil appraisal services.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
41. A significant decrease in the amount of litigation associated with services for the handicapped has occurred primarily due to a general acceptance of societies' responsibility to educate and employ the handicapped.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
42. Since public school education now provides services to individuals from birth to death (as seen in the community school concept), appraisal services are no longer narrowly focused upon a child's academic achievement.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
43. The Open Records Law has resulted in the necessity of schools providing training to parents in the interpretation of school appraisal procedures and results.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
44. Due process procedures necessary for legal pupil appraisal are so expensive and time consuming that schools operate special education services only for the most obviously handicapped students.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

EVENTS	In each box below, write down the projected date (1975 - 1990) for the occurrence of each event, given a 60% probability of occurrence	In each box below, assign a value to each event by circling a numerical value.
45. Due to the consistent relationship of lower socioeconomic status with lower school achievement, the community school concept has emerged as an appropriate mechanism through which public schools can provide lower socioeconomic status families with enrichment opportunities ordinarily available to higher socioeconomic families.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5
46. Societal values are acceptant of infanticide when either fetus or infant is determined severely abnormal; therefore, there has been a dramatic improvement in appraisal services for infants.		+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

Appendix C

Introductory Letter and Round Three Forms

211 east seventh street austin texas 78701 512/476-6861
texas
regional
resource
center

Enclosed is Round III of the Texas Regional Resource Center Delphi Appraisal. With the enclosed materials, you can compare your original responses to other Delphi participants.

Just as in the previous Round, retain the top copies (white sheets) and return the other copies in the enclosed envelope by May 28. You will need your copy for comparison purposes later. Also, please fill out the enclosure entitled "Statement" and include it in the return envelope. The additional dollar reimbursement is for our oversight of not stamping the Round II return envelope.

Take a break to have a cup of coffee on us (enclosed) and respond to Round III.

Sincerely,

Henry Morrow

Henry Morrow, Ed.D.
Program Coordinator

HM:msm

Enclosures

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DELPHI APPRAISAL ROUND III

Directions

1. Compare your original estimate of each event statement from Round II with the distribution presented in the "Results" column. The "Results" column of the enclosed materials indicates the Inter-quartile Range of all responses to each event statement. The Median date estimate is indicated by the asterisk "*". The L and N = the % of responses later than 1990 and Never.

Example:

Round II		Round III
Events	In each box below...	Results Column
1. Due to the Open Records...	N	Inter-quartile Range 75 80 85 90 Percent of L N 1. — * — 2 2

2. If your Round II response was outside the Inter-quartile Range, consider whether you want to specify a new date.

3. If you wish to change your estimate to a date within the Inter-quartile Range, write the new date in the second column (of Round III) and leave the Reason column blank.

4. If your estimate is within the Inter-quartile Range and you do not want to change it, write an "S" in the second column and leave the Reason Column blank.

Directions
Page 2.

5. If you wish to leave your estimate outside the Inter-quartile Range (including L or N estimates) specify in the "Reason" column (far right hand column) why you feel your estimate is more plausible.

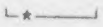
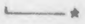
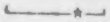
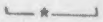
Example: (1. Your Round II estimate: N)

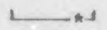
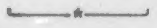
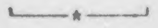
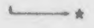
Round III

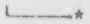
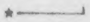
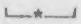
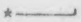
Results Column Inter-quartile Range 75 80 85 90	Percent of L	Percent of N	New Date Estimate or S for Same Date Estimate	Reasons Column Only Note Reasons...
1. —*—	2	2	**S**	Schools will destroy records rather than share them as did schools X, Y, and Z.

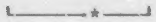
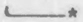
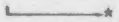
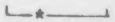
6. When you have responded to all events, tear off the first copy (white sheets) and keep it. You will need it for comparison purposes later.

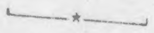
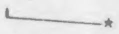
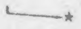
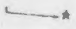
7. Place the second copies (yellow sheets) along with the "Statement" page in the enclosed envelope and return it to TRRC by May 28.

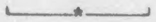
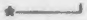
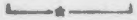
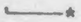
RESULTS COLUMN			New Date Estimate or S for Same Date Estimate	REASONS COLUMN
Interquartile Range 75 80 85 90	Percent of L	 N		Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
1.  Q1-Q3 = 78-85	5	48		
2.  Q1-Q3 = 80-85	7	8		
3.  Q1-Q3 = 80-87	14	17		
4.  Q1-Q3 = 80-85	7	5		

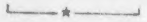
RESULTS COLUMN			New Date Estimate or S for Same Date Estimate	REASONS COLUMN
Interquartile Range				Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
75 80 85 90	Percent of L	 N		
5.  Q1-Q3 = 80-86	5	29		
6.  Q1-Q3 = 80-90	9	10		
7.  Q1-Q3 = 80-90	8	5		
8.  Q1-Q3 = 80-85	12	6		

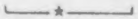
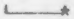
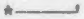
RESULTS COLUMN			New Date Estimate or S for Same Date Estimate	REASONS COLUMN
Interquartile Range				Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
75 80 85 90	Percent of L	 N		
9.  Q1-Q3 = 80–85	10	10		
10.  Q1-Q3 = 80–85	9	39		
11.  Q1-Q3 = 85–90	24	43		
12.  Q1-Q3 = 85–90	23	46		

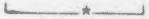
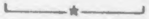
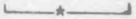
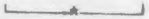
RESULTS COLUMN Interquartile Range 75 80 85 90	Percent of L	 N	New Date Estimate or for Same Date Estimate	REASONS COLUMN Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
13.  Q1-Q3 = 80-90	19	33		
14.  Q1-Q3 = 85-90	23	44		
15.  Q1-Q3 = 78-85	5	70		
16.  Q1-Q3 = 83-90	22	2		

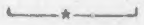
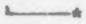
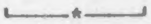
RESULTS COLUMN Interquartile Range 75 80 85 90	Percent of L	 N	New Date Estimate or S for Same Date Estimate	REASONS COLUMN Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
17.  Q1-Q3 = 80-85	21	2		
18.  Q1-Q3 = 83-90	37	15		
19.  Q1-Q3 = 85-90	37	30		
20.  Q1-Q3 = 85-90	29	17		

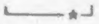
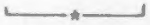
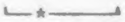
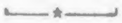
RESULTS COLUMN Interquartile Range 75 80 85 90	Percent of L	Percent of N	New Date Estimate or S for Same Date Estimate	REASONS COLUMN Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
21.  Q1-Q3 = 80-90	10	20		
22.  Q1-Q3 = 85-90	38	10		
23.  Q1-Q3 = 82-90	32	42		
24.  Q1-Q3 = 85-90	45	25		

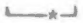
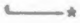
RESULTS COLUMN Interquartile Range 75 80 85 90	Percent of L	Percent of N	New Date Estimate or S for Same Date Estimate	REASONS COLUMN Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
25.  Q1-Q3 = 82-90	24	3		
26, Q1-Q3 = 80-85	8	17		
27. Q1-Q3 = 75-80	2	27		
28. Q1-Q3 = 79-85	0	8		

RESULTS COLUMN			New Date Estimate or S for Same Date Estimate	REASONS COLUMN
Interquartile Range				Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
75 80 85 90	Percent of L	N		
29.  Q1-Q3 = 82-90	16	23		
30. Q1-Q3 = 79-85	3	16		
31.  Q1-Q3 = 85-90	27	55		
32.  Q1-Q3 = 85-90	25	11		

RESULTS COLUMN			New Date Estimate or S for Same Date Estimate	REASONS COLUMN
Interquartile Range				Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
75 80 85 90	Percent of L	 N		
33.  Q1-Q3 = 80-89	12	20		
34.  Q1-Q3 = 80-90	25	44		
35.  Q1-Q3 = 82-90	18	11		
36.  Q1-Q3 = 80-90	28	7		

RESULTS COLUMN Interquartile Range 75 80 85 90	Percent of L	 N	New Date Estimate or S for Same Date Estimate	REASONS COLUMN Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
37.  Q1-Q3 = 82-90	14	10		
38.  Q1-Q3 = 80-85	8	15		
39.  Q1-Q3 = 80-90	12	18		
40. Q1-Q3 = 76-80	0	42		

RESULTS COLUMN			New Date Estimate or S for Same Date Estimate	REASONS COLUMN
Interquartile Range				Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
75 80 85 90	Percent of L	N		
41.  Q1-Q3 = 80-86	18	3		
42.  Q1-Q3 = 80-90	20	10		
43.  Q1-Q3 = 78-85	5	10		
44.  Q1-Q3 = 78-85	5	57		

RESULTS COLUMN			New Date Estimate or S for Same Date Estimate	REASONS COLUMN
Interquartile Range				Only Note Reasons for Date Estimate if it Remains Outside Interquartile Range
75 80 85 90	Percent of L	 N		
45.  Q1-Q3 = 80-85	11	10		
46.  Q1-Q3 = 85-90	28	38		

Appendix D

Scenarios on University Training

Scenario A

Jan Harris Ford

The competency-based special education diagnostician is trained as an integrative specialist, skilled in analysis, synthesis, organizational dynamics, etc., and schooled in such professional disciplines as law, medicine, sociology, and curriculum and instruction. Compared to the appraisal specialists of years past, today's diagnosticians are more highly trained, and their progress in training programs is, in most states, based upon continuous, on-the-job evaluation of specific competencies, according to nationwide competency-based criteria. These skills include competency in nutritional appraisal and milieu assessment and include the ability to analyze a student's total environment and to implement correspondingly appropriate intervention techniques. Diagnosticians are also required to be proficient in appraisal of specific vocational abilities, in the administration of psycholinguistic tests, and in intervening with related and effective remediation procedures. Their training includes extensive instruction related to the administration of learning-conducive drugs, to the relative and individual monitoring of medicated students, and to the principles of drug-induced behavior modification. It includes experience with defined educational objectives and the skills required to appraise pupils with criterion-referenced tests. In 60% of the training programs across the nation, a significant proportion of time is devoted to the development of skills in producing accountability information associated with school programs.

Substantial progress in special education has been made in the past several years, resulting in earlier identification of disabilities. In 40 states all handicapped children are eligible for public education at the time the handicapping condition is identified, even as early as birth. In fact, due to the health maintenance organizations available to the majority of society, 70% of all children who will require special services in the schools are identified by the age of 5. Eighty percent of all children with physiological defects causing mental retardation are identified within the first six months after birth. These circumstances are in part due to the fact that 40 states now require preschool assessment of all children in a manner similar to laws requiring inoculation against communicable diseases. Due to the advancements made in the area of early identification and the availability of special education to the identified children as early as birth, there are many competency-based special education diagnosticians, well trained and qualified to help the handicapped child through the sensorimotor stage, the preoperational and concrete operational stages of intellectual development.

With regard to practicing diagnosticians and the methods of appraisal, federal legislation has resulted in the strict certification of psychological tests in order to prevent the publication and use of tests not meeting rigorous validity and reliability standards. Diagnosticians now use primarily a refined model of the John Ertle "neutral efficiency index," which has replaced 70% of the IQ tests used years ago. The litigation of the 70's did, however, have the negative effect of requiring the use of complicated inefficient procedures for pupil appraisal. Some of this inefficiency fortunately has been countered by the greatly increased use of computers for educational purposes. A computerized national data bank of medical and health-related information on 85% of the population is accessible to authorized professional personnel by remote access terminal, and computer devices are used by 80% of the schools for evaluation and diagnosis of learning and/or behavioral difficulties in students. The multiple uses of, and extended applications of, computers has actually reduced the cost and time of pupil appraisal (despite the more complicated and inefficient tools) by 50% by simultaneously appraising large groups of students through the use of time share computers.

The special education diagnostician works according to criterion-referenced goals with a population which includes infants and preschool children, children from 5-21, and adult students throughout life. This population is comprised of a lower percentage of minority group members, since federal court orders and legislation fixed the ratios of allowable ethnic membership in special education classes.

Looking back upon the 1960's and 70's one wonders what changes are ahead for appraisal in the twenty-first century.

Scenario B

Nora Nielson

The theoretical and philosophical orientation of the special educational diagnostician training program at the University of Texas emphasizes a preventative appraisal approach. Students in this program are taught to apply practically the methods derived from these theories through a transdisciplinary approach involving the integrative disciplines of law, medicine, sociology, curriculum and instruction, computer technology, and special education. The primary focus of this training program is on preparing special education diagnosticians who are competent in providing total appraisal services to severely or multihandicapped individuals regardless of age, and to a lesser extent it prepares these students to provide services to the mildly handicapped.

There are two basic federal components involved in achieving demonstrated competency leading to certification in the special education diagnostician training program. First, the student must demonstrate competency in the administration and interpretation of nationally certified, standardized psychological tests. Second, the student must demonstrate proficiency in nationwide competency-based criteria for special education diagnostic personnel. The training program at the University of Texas is designed to prepare the student to demonstrate the required state and federal competencies leading to certification in special education diagnostics.

The following areas have been designated as the major components of the special education diagnostician training program:

1. Methods and techniques of interpreting assessment procedures and results to parents or legal guardians.
2. The assessment of information producing program accountability for school programs.
3. Computer assessment techniques. Analysis, synthesis, and organizational dynamic skills related to automatic assessment instruments.
4. Principles of drug-induced behavior modification.
5. Legal implications for appraisal personnel.
6. Human growth and development on a birth to death continuum.
7. Nutritional appraisal techniques.
8. Psycholinguistic appraisal techniques.

9. Academic assessment techniques.
    Administration and interpretation of nationally certified standardized tests.
    Administration, interpretation, and program derivation from informal assessment tools.

10. Vocational assessment techniques and procedures.

11. Affective domain assessment techniques and procedures.

Scenario C

John Futch

Training for diagnosticians has become a lengthy process involving seven years of preparation. Culmination of training prior to competency-based certification involves a full year as an intern working under the direction of an accredited diagnostician. Their training has become much broader in scope since they no longer deal strictly with children. Diagnosticians must have a thorough understanding of all ages and personalities, and since all regular and instructional personnel are trained in techniques for instructing exceptional children, diagnosticians are no longer needed for appraising the mildly handicapped. Diagnosticians of 1990 have medical training which allows them to diagnose minimal psychiatric disorders and prescribe medication. As part of their competency-based certification, a medical review board must approve them before they become licensed. Because improperly classified individuals have the right to sue for damages, diagnostic specialists use extensive automated assessment instruments and procedures as well as simultaneous appraisal of large groups through computerized analysis. Periodic reassessment of cognitive, motor, and emotional development, as well as nutritional appraisal of individuals, has necessitated that diagnosticians be nutritionists as well. A significant portion of their training involves nutrition. Diagnosticians must be re-examined for competency every three years, and one month of each year must be spent in refresher courses.